CDX-424RF

SERVICE MANUAL

US Model
Canadian Model
E Model

Model Name Using Similar Mechanism	CDX-505RF
CD Drive Mechanism Type	MG-250C-137
Optical Pick-up Name	KSS-521A/J2N

SPECIFICATIONS

CD changer (CDX-424RF)

System	Compact disc digital audio system
Laser Diode Properties	Material: GaAlAs Wavelength: 780 nm Emission Duration: Continuous Laser out-put Power: Less than 44.6 µW*

** This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Frequency response	10 – 20,000 Hz
Wow and flutter	Below than the measurable limit
Signal-to-noise ratio	94 dB
Output terminals	BUS control output terminal (8 pin) Analog audio output terminal (RCA pin)
Current drain	800 mA (at playback) 800 mA (at disc loading/ejecting)
Operating temperature	–10 °C to +55 °C (14 °F to 131 °F)
Dimensions	Approx. 262 × 90 × 181.5 mm ($10\ ^3/_8 \times 3\ ^5/_8 \times 7\ ^1/_4$ in.) (w/h/d)
Mass	Approx. 2.1 kg (4 lb. 10 oz.)

Hideaway unit/ Wired remote (RM-X64)

Frequency	88.3 MHz/88.5 MHz/ 88.7 MHz/88.9 MHz/ 89.1 MHz/89.3 MHz/ 89.5 MHz/89.7 MHz/ 89.9 MHz (switchable)
Dimensions	Hideaway unit: Approx. 124.8 × 30.0 × 99.8 mm ($5 \times 1\ ^3/_{16} \times 4$ in.) (w/h/d) Wired remote: Approx. 148 × 30 × 15 mm ($5\ ^7/_8 \times 1\ ^3/_{16} \times\ ^{19}/_{32}$ in.) (w/h/d)
Mass	Hideaway unit: Approx. 330 g (11.64 oz.) Wired remote: Approx. 120 g (4.2 oz.)

Supplied accessories

Disc magazine (1)
Parts for installation and connections (1 set)

Design and specifications subject to change without notice.

COMPACT DISC CHANGER SYSTEM

MICROFILM

SONY®

TABLE OF CONTENTS

1. SERVICING NOTES 2

2. GENERAL
Installation 3
Connections 4
Location and Function of Controls 6

3. DISASSEMBLY 7

4. MECHANISM DECK ASSEMBLY 13

5. MECHANICAL ADJUSTMENTS 15

6. ELECTRICAL ADJUSTMENTS 16

7. DIAGRAMS
7-1. Notes for Printed Wiring Board and Schematic Diagram 18
7-2. Printed Wiring Boards – RF Section – 19
7-3. Schematic Diagram – RF Section – 21
7-4. Printed Wiring Boards – MAIN (Component Side) /JACK Board – 23
7-5. Printed Wiring Board – MAIN Board (Conductor Side) – 25
7-6. Schematic Diagram – MAIN Section (1/2) – 27
7-7. Schematic Diagram – MAIN Section (2/2) – 29
7-8. IC Pin Function Description 35

8. EXPLODED VIEWS 37

9. ELECTRICAL PARTS LIST 43

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

Laser Diode Properites
- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 µW*

  * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

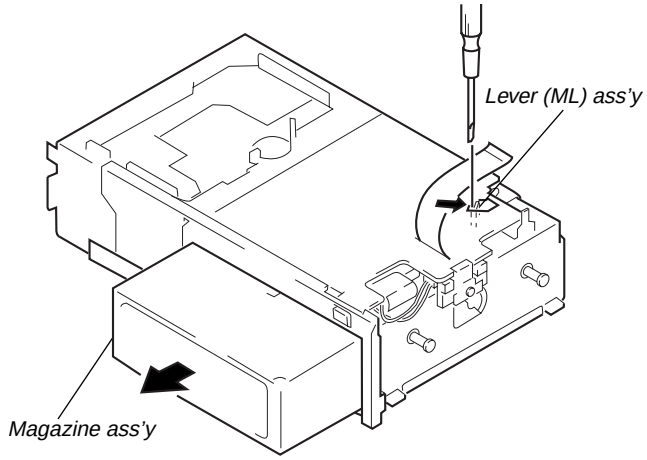
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

DISC MAGAZINE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF

Remove the CASE (LOWER) assembly beforehand

1) Press the lever (ML) assy to arrow direction.
2) Removal the magazine assy.

Note: Take out the magazine only when the tray is completely within the magazine. If the disk or tray is sticking out, turn on the power and eject the magazine.



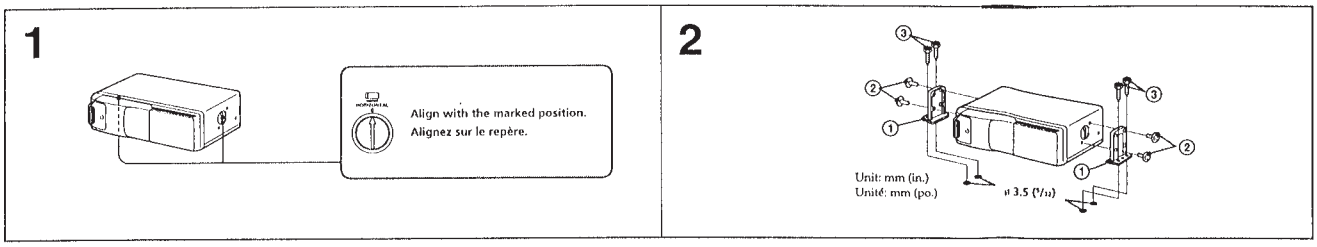
This section is extracted from instruction manual.

Installation

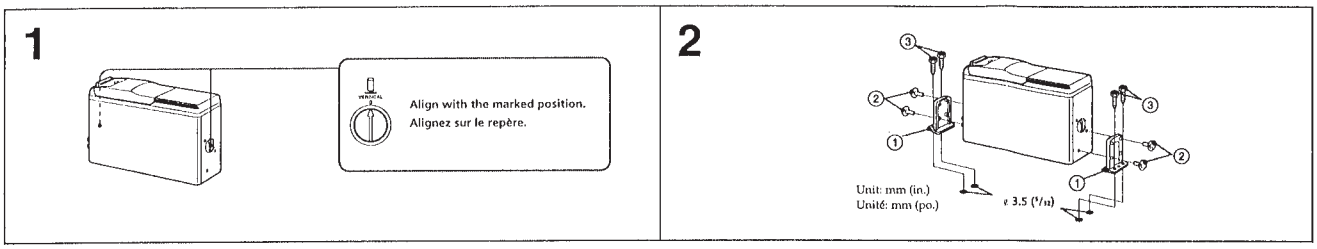
How to install the CD changer

When you install the CD changer, be careful not to damage wiring or equipment on the other side of the mounting surface.

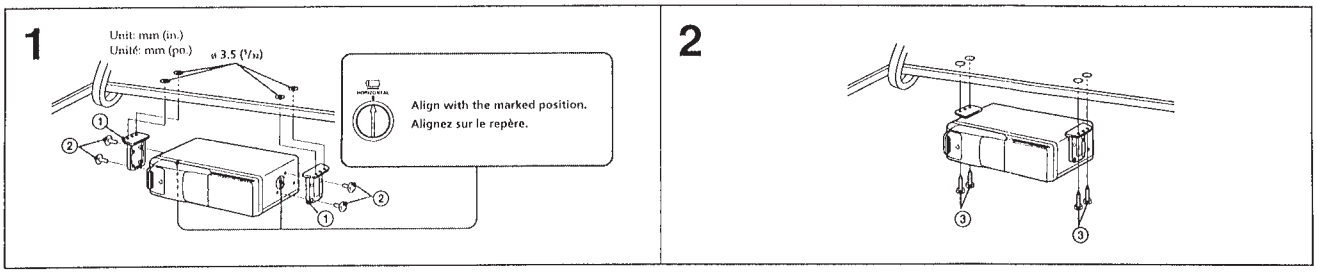
Horizontal installation



Vertical installation



Suspended installation

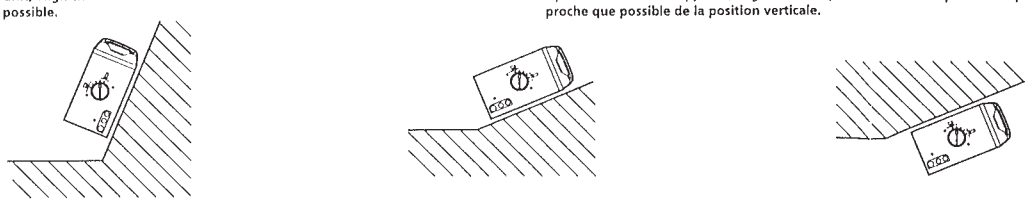


When the unit is to be installed under the rear tray or in the trunk, observe the following.

- Choose the mounting location carefully so the unit can be installed horizontally.
- Make sure the unit does not hinder the movement of the trunk door.
- Make holes of ø 3.5 mm (9/32 in.) only after making sure there is nothing on the other side of the mounting surface.

Inclined installation

After installing the unit, align the dials with one of the marks so the arrow comes as close to a vertical position as possible.



Note
Be sure to align the left and right dials with the same mark.

Installation

Installation du changeur de CD

Quand vous installez le changeur de CD, veillez à ne pas endommager les câbles ou les instruments qui se trouvent de l'autre côté.

Installation horizontale

Installation verticale

Installation suspendue

Si vous comptez installer le changeur de CD sous la plage arrière par exemple ou dans le coffre, prenez les précautions suivantes.

- Choisissez soigneusement l'emplacement pour que le changeur soit à l'horizontale.
- Vérifiez que le changeur ne gêne pas le ressort du capot, entre autres.
- Ne percez les trous de 3,5 mm (9/32 po.) ø qu'après vous être assuré qu'il n'y avait rien de l'autre côté de la surface de montage.

Installation inclinée

Après avoir installé l'appareil, alignez les disques sur l'un des repères afin que la flèche soit aussi proche que possible de la position verticale.

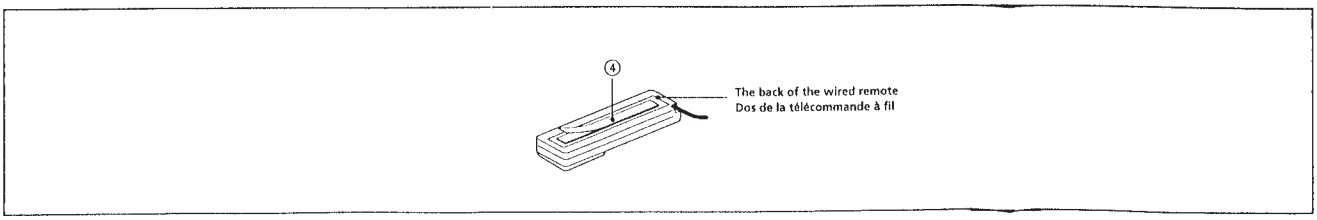
Remarque
Veillez à aligner les disques gauche et droite sur le même repère.

Installing the wired remote

Use the supplied double-sided adhesive tape ④, and mount the wired remote in a suitable location where it will not interfere with your driving.

Installation de la télécommande à fil

Utilisez la bande à double face adhésive fournie ④ pour installer la télécommande à fil dans un endroit qui ne risque pas de gêner la conduite.



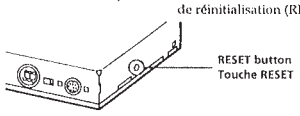
Connections

Caution

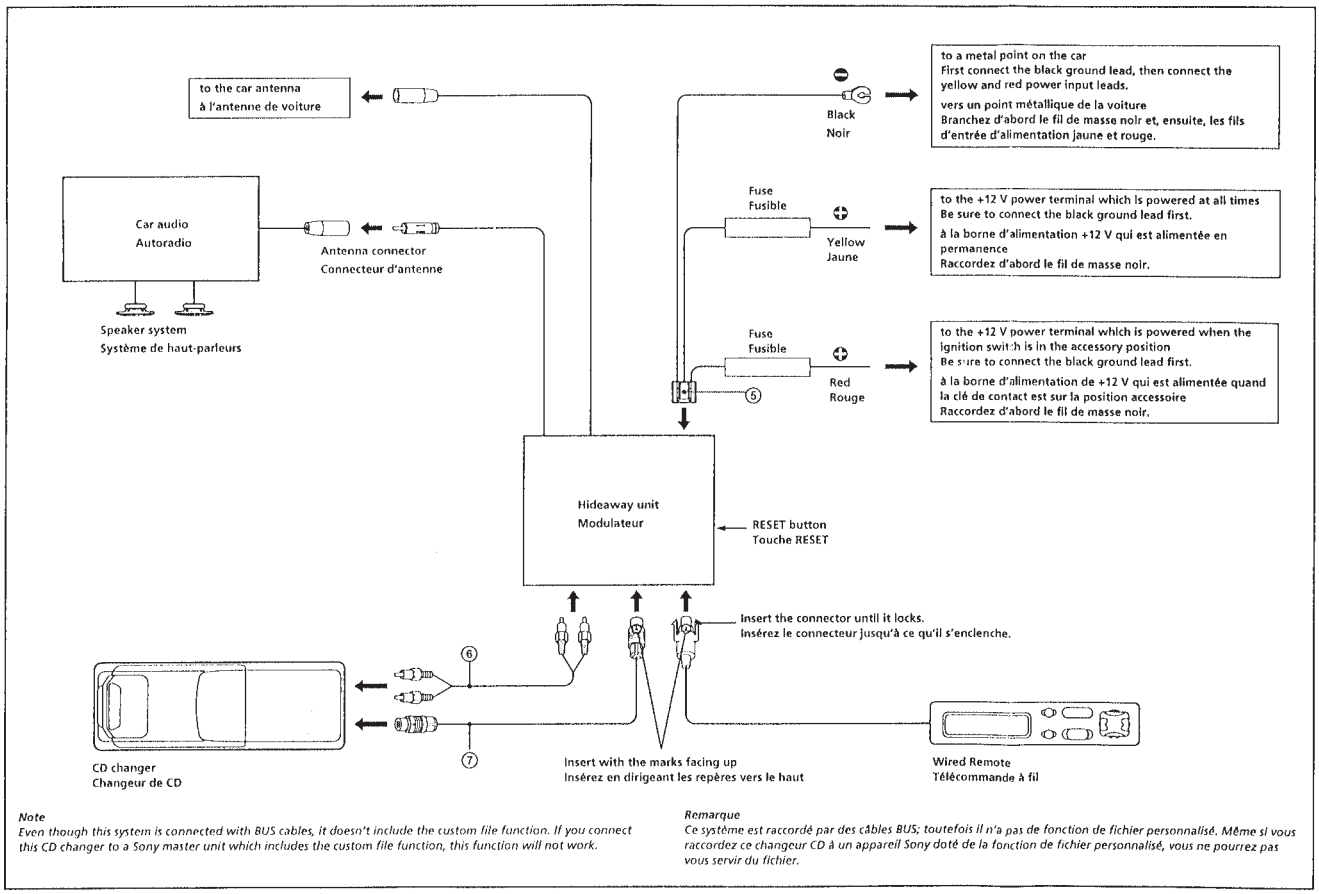
- This system is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is powered when the ignition switch is in the accessory position.
- **Run all ground wires to a common ground point.**
- **Press RESET button on the hideaway unit after completing the connections.**
- The use of optical instruments with this product will increase eye hazard.

Reset button

Before operating the unit for the first time or after replacing the car battery, press RESET on the hideaway unit with a ball-point pen, etc.



Connection diagram


to the car antenna
à l'antenne de voiture
Car audio
Autoradio
Antenna connector
Connecteur d'antenne
Speaker system
Système de haut-parleurs
to a metal point on the car
First connect the black ground lead, then connect the yellow and red power input leads.
vers un point métallique de la voiture
Branchez d'abord le fil de masse noir et, ensuite, les fils d'entrée d'alimentation jaune et rouge.
Black
Noir
Fuse
Fusible
to the +12 V power terminal which is powered at all times
Be sure to connect the black ground lead first.
à la borne d'alimentation +12 V qui est alimentée en permanence
Raccordez d'abord le fil de masse noir.
Yellow
Jaune
Fuse
Fusible
to the +12 V power terminal which is powered when the ignition switch is in the accessory position
Be sure to connect the black ground lead first.
à la borne d'alimentation de +12 V qui est alimentée quand la clé de contact est sur la position accessoire
Raccordez d'abord le fil de masse noir.
Red
Rouge
Hideaway unit
Modulateur
RESET button
Touche RESET
Insert the connector until it locks.
Insérez le connecteur jusqu'à ce qu'il s'enclenche.
CD changer
Changeur de CD
Insert with the marks facing up
Insérez en dirigeant les repères vers le haut
Wired Remote
Télécommande à fil

Note

Even though this system is connected with BUS cables, it doesn't include the custom file function. If you connect this CD changer to a Sony master unit which includes the custom file function, this function will not work.

Fuse replacement

If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction.

Warning

Use a fuse with the specified amperage rating. Use of a higher amperage fuse may cause serious damage.

Connexions

Précautions

- Ce système est conçu pour fonctionner sur courant continu de 12 V avec masse négative.
- Avant d'effectuer les raccordements, débranchez la borne de terre de la batterie du véhicule pour éviter tout court-circuit.
- Branchez les fils d'entrée d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres branchements.
- Veillez à ne pas raccorder le fil rouge d'entrée d'alimentation à la borne positive de 12 V qui est alimentée quand la clé de contact est sur la position accessoire.
- **Rassemblez tous les fils de terre en un point de masse commun.**
- **Quand vous avez terminé les connexions, appuyez sur la touche RESET du modulateur.**

Touche de réinitialisation

Avant la mise en service du système ou après avoir remplacé la batterie de voiture, appuyez sur la touche de réinitialisation (RESET) sur le modulateur avec un stylo bille ou un autre objet pointu.

Diagrama de conexión

Remarque

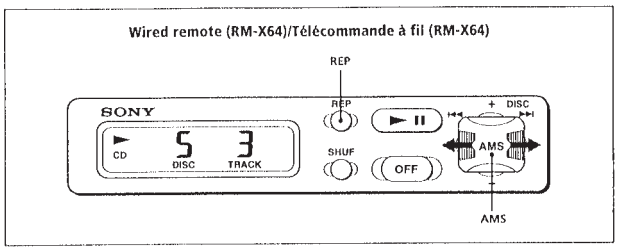
Ce système est raccordé par des câbles BUS; toutefois il n'a pas de fonction de fichier personnalisé. Même si vous raccordez ce changeur CD à un appareil Sony doté de la fonction de fichier personnalisé, vous ne pourrez pas vous servir du fichier.

Remplacement du fusible

Si le fusible saute, vérifiez les connexions d'alimentation et remplacez-le. Si le fusible saute à nouveau quand vous venez de le remplacer, il s'agit peut être d'un mauvais fonctionnement interne.

Avertissement

Utilisez un fusible de l'ampérage spécifié. L'utilisation d'un fusible d'ampérage supérieur peut causer de sérieux dommages.



Changing the transmitting frequency

Because this unit processes CD playback sound through an FM tuner, there may be interference noise during CD playback. In this case change the frequency of the modulated RF signal transmitted from hideaway unit. The initial setting is 88.3 MHz.

1 Press (REP) for two seconds until frequency appears.

2 Press either the left or right side of (AMS) to select the frequency.
Each time you press (AMS), the frequency changes as follows:

▶▶I : 88.3 MHz → 88.5 MHz → 88.7 MHz → 88.9 MHz → 89.1 MHz → 89.3 MHz → 89.5 MHz → 89.7 MHz → 89.9 MHz →
I◀◀ : 89.9 MHz → 89.7 MHz → 89.5 MHz → 89.3 MHz → 89.1 MHz → 88.9 MHz → 88.7 MHz → 88.5 MHz → 88.3 MHz

3 Press (REP) for more than two seconds.

Note
Be sure to set the frequency of your FM tuner to the newly selected frequency.

Changement de la fréquence de transmission

Comme cet appareil traite le son de lecture CD via un syntoniseur FM, il se peut qu'il y ait des interférences durant la lecture du CD. Si c'est le cas, changez la fréquence du signal FM modulé transmis par le modulateur. Le réglage initial est de 88,3 MHz.

1 Appuyez sur (REP) pendant deux secondes jusqu'à ce que la fréquence apparaisse.

2 Appuyez sur la gauche ou la droite de (AMS) pour choisir la fréquence.
A chaque pression sur la touche (AMS), la fréquence change dans l'ordre suivant:

▶▶I : 88,3 MHz → 88,5 MHz → 88,7 MHz → 88,9 MHz → 89,1 MHz → 89,3 MHz → 89,5 MHz → 89,7 MHz → 89,9 MHz →
I◀◀ : 89,9 MHz → 89,7 MHz → 89,5 MHz → 89,3 MHz → 89,1 MHz → 88,9 MHz → 88,7 MHz → 88,5 MHz → 88,3 MHz

3 Appuyez sur (REP) pendant plus de deux secondes.

Remarque
N'oubliez pas de régler votre tuner FM sur la nouvelle fréquence choisie.

Changing the output level

You can select the output level of the CD changer. Normally the initial output level is adequate; change the level if necessary.

1 Press (REP) for two seconds.

2 Press (REP).

CD 3 00 0 LEVEL — Initial setting

3 Press either the left or right side of (AMS) to select the output level.

To decrease the output level

I◀◀ : → CD 1 0 LEVEL

To increase the output level

▶▶I : → CD 4 00 00 LEVEL

4 Press (REP) for more than two seconds.

Changement du niveau de sortie

Vous pouvez sélectionner le niveau de sortie du changeur de CD. Normalement, le système fonctionne sur le niveau de sortie initial. Changez-le si nécessaire.

1 Appuyez sur (REP) pendant deux secondes.

2 Appuyez sur (REP).

CD 3 00 0 LEVEL — Réglage initial

3 Appuyez sur la gauche ou la droite de (AMS) pour choisir le niveau.

Pour diminuer le niveau de sortie

I◀◀ : → CD 1 0 LEVEL

Pour augmenter le niveau de sortie

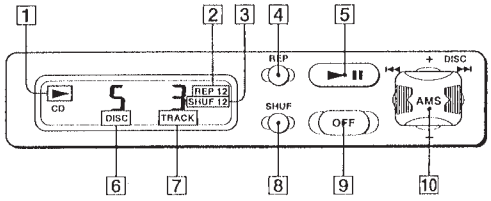
▶▶I : → CD 4 00 00 LEVEL

4 Appuyez sur (REP) pendant plus de deux secondes.

Location and function of controls

Nomenclature

Wired remote (RM-X64)/Télécommande à fil (RM-X64)



1 ► (play/pause) indication
Lights during CD playback and flashes when the pause button is pressed.

2 REP (repeat play) indication

3 SHUF (shuffle play) indication

4 REP (repeat play/control mode set) button

5 ►II (play/pause) button
If pressed during playback, the CD will pause. If pressed again, playback will continue.

6 DISC (disc number) indication
The indicated disc number matches the disc number in the disc magazine.

7 TRACK (track number) indication

8 SHUF (shuffle play) button

9 OFF button

10 AMS*/DISC (disc select/manual search) button
Depending on which side of the button you press, you can select from the functions below.

* *Automatic Music Sensor*

1 Témoin de lecture/pause (►)
Il s'allume pendant la lecture de CD et clignote pendant le mode de pause.

2 Indication de répétition de la lecture (REP)

3 Indication de lecture aléatoire (SHUF)

4 Touche de répétition de la lecture/mode de réglage (REP)

5 Touche de lecture/pause (►II)
Si vous appuyez pendant la lecture de CD, l'appareil se met en mode de pause. Appuyez de nouveau pour reprendre la lecture.

6 Numéro de disque (DISC)
Le numéro de disque indiqué correspond au numéro de disque dans le chargeur.

7 Numéro de plage (TRACK)

8 Touche de lecture aléatoire (SHUF)

9 Touche d'arrêt de la lecture de CD (OFF)

10 Touche de disque/recherche manuelle (AMS*/DISC)
Selon le côté de la touche où vous appuyez, vous pouvez choisir une des fonctions suivantes.

* *Automatic Music Sensor: Détecteur automatique de plages musicales*

AMS function
To locate the beginning of a track, press
►►I to locate the beginning of the next track.
I◄◄ to locate the beginning of the track currently played.
If you press the button repeatedly, the beginnings of all following or previous tracks will be located until the end of the disc is reached.

Disc select function
To select a desired disc, press **momentarily**:
+ to select the next disc.
– to select the previous disc.

Manual search function
To quickly locate a desired point of a track, press **and hold down**:
+ to fast-forward.
– to fast-reverse.
The elapsed playing time of the track will be shown in the display window during manual search.

Fonction AMS
Quand vous recherchez le début d'une plage, appuyez sur
►►I pour localiser le début de la plage suivante.
I◄◄ pour localiser le début de la plage en cours.
Si vous appuyez à plusieurs reprises sur le sélecteur, vous pourrez localiser le début des plages précédentes ou suivantes jusqu'à la fin du disque.

Fonction de sélection de disque
Quand vous voulez sélectionner un disque, appuyez momentanément sur:
+ pour choisir le disque précédent.
– pour choisir le disque suivant.

Fonction de recherche manuelle
Quand vous voulez rechercher rapidement un passage d'une plage, appuyez **et tenez enfonce**:
+ pour avancer rapidement.
– pour reculer rapidement.
La durée écoulée de la plage apparaît sur l'afficheur pendant la recherche manuelle.

When the unit is used in a car without an accessory position on the ignition key switch

Be sure to press (OFF) on the wired remote to turn the system off to avoid battery wear while the engine is not running.

Quand l'appareil est utilisé dans une voiture sans position accessoire de la clé de contact

N'oubliez pas d'appuyer sur (OFF) de la télécommande à fil pour éteindre la chaîne et éviter l'usure de la batterie quand vous quittez votre voiture et que le moteur ne tourne pa.

Troubleshooting guide

The following checklist will assist in the correction of most problems which you may encounter with your unit. Before going through the checklist below, refer to the connection and operating procedures.

General

Problem	Cause/Solution
The unit does not function.	• The built-in micro computer has malfunctioned. → **Press the reset button on the hideaway unit.** • The connecting cords are not connected properly.
The sound skips.	• The CD changer is installed in an unstable location. → **Reinstall it in a stable location.** • The disc(s) is dirty or defective. → **Clean or replace it (them).**
The disc magazine is not locked in the CD changer.	Take out the disc magazine, press (EJECT), and reinsert the disc magazine until it is locked securely.

Guide de dépannage

La liste de contrôles suivante vous permettra de remédier à la plupart des problèmes que vous pourriez rencontrer avec cet appareil. Avant de parcourir cette liste de contrôles, revérifiez les procédures de raccordement et les instructions d'utilisation.

Problèmes généraux

Problème	Cause/solution
Le système ne fonctionne pas.	• Le micro-ordinateur intégré est défaillant. → **Appuyez sur la touche de réinitialisation du modulateur.** • Les cordons de raccordement sont mal branchés.
Le son saute.	• Le changeur de CD est installé dans un endroit instable. → **Réinstallez-le dans un endroit stable.** • Le disque est sale ou défectueux → **Nettoyez ou remplacez le disque.**
Le chargeur de disques est mal encastré.	Sortez le chargeur de disques, appuyez sur (EJECT) et réintroduisez-le ensuite jusqu'à ce qu'il s'encliquette.

Error displays

The following indications will flash for about five seconds.

Display	Cause	Solution
E-01	The disc magazine is not inserted in the CD changer.	Insert the disc magazine with discs into the CD changer.
E-02	No disc is inserted in the disc magazine.	Take out the disc magazine and insert a disc(s).
E-04	The disc is dirty.	Clean the disc.
	The disc is inserted upside down.	Insert the disc correctly.
E-99	The CD changer cannot be operated because of some problem.	Press RESET button on the hideaway unit.

If the solutions mentioned above do not improve the situation, consult your nearest Sony dealer.

Affichages d'erreur

Les indications suivantes clignotent pendant environ cinq secondes.

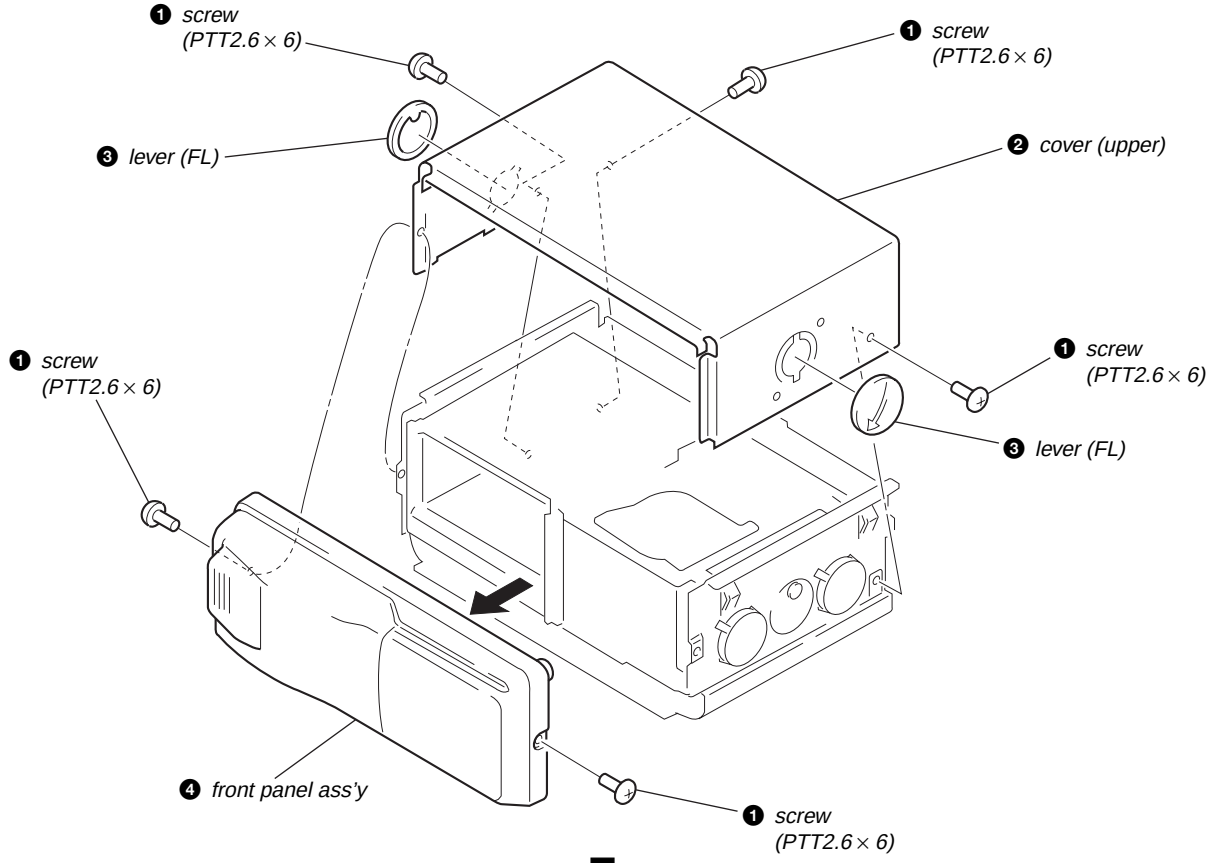
Affichage	Cause	Solution
E-01	Pas de chargeur de disques dans le changeur de CD.	Insérez un chargeur avec des disques dans le changeur de CD.
E-02	Pas de disque dans le chargeur.	Enlevez le chargeur et insérez des disques.
E-04	Le disque est sale.	Nettoyez le disque.
	Le disque est inséré à l'envers.	Insérez le disque correctement.
E-99	Le changeur de CD ne fonctionne pas.	Appuyez sur la touche RESET du modulateur.

Si les solutions mentionnées ci-dessus ne peuvent pas résoudre le problème, consultez le revendeur Sony le plus proche.

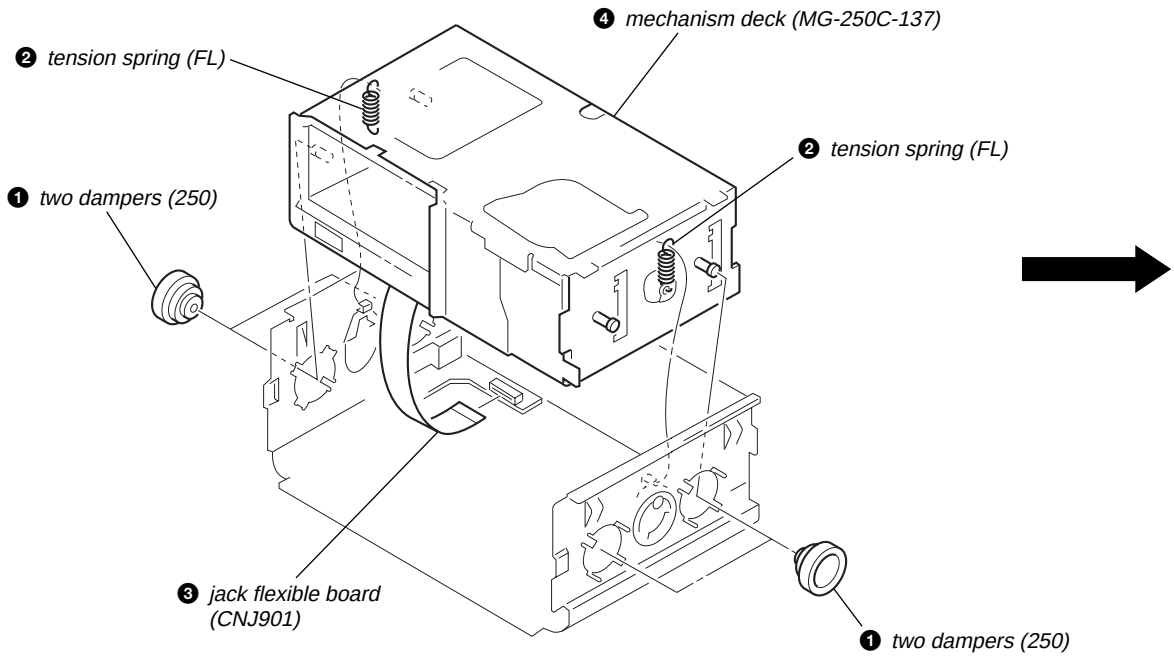
SECTION 3
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

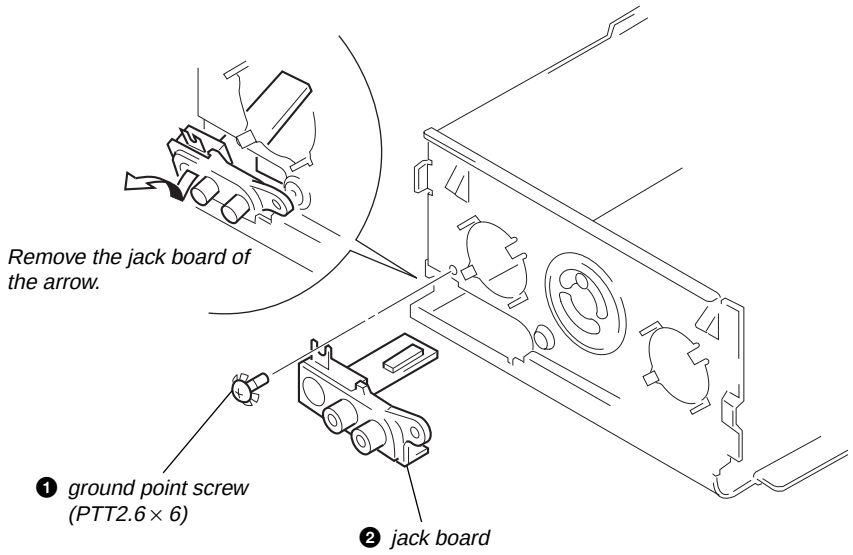
COVER (UPPER), FRONT PANEL ASS'Y


❶ screw (PTT2.6 × 6)
❶ screw (PTT2.6 × 6)
❸ lever (FL)
❷ cover (upper)
❶ screw (PTT2.6 × 6)
❶ screw (PTT2.6 × 6)
❸ lever (FL)
❹ front panel ass'y
❶ screw (PTT2.6 × 6)

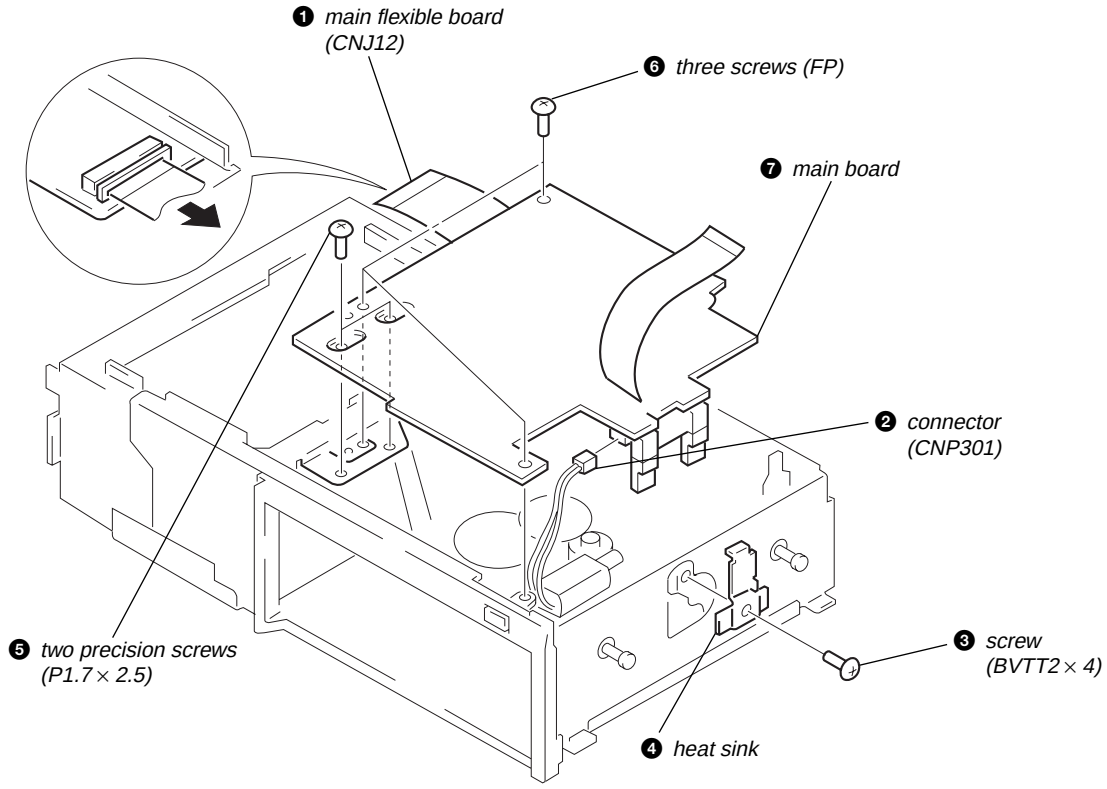
MECHANISM DECK (MG-250C-137)


❹ mechanism deck (MG-250C-137)
❷ tension spring (FL)
❷ tension spring (FL)
❶ two dampers (250)
❸ jack flexible board (CNJ901)
❶ two dampers (250)

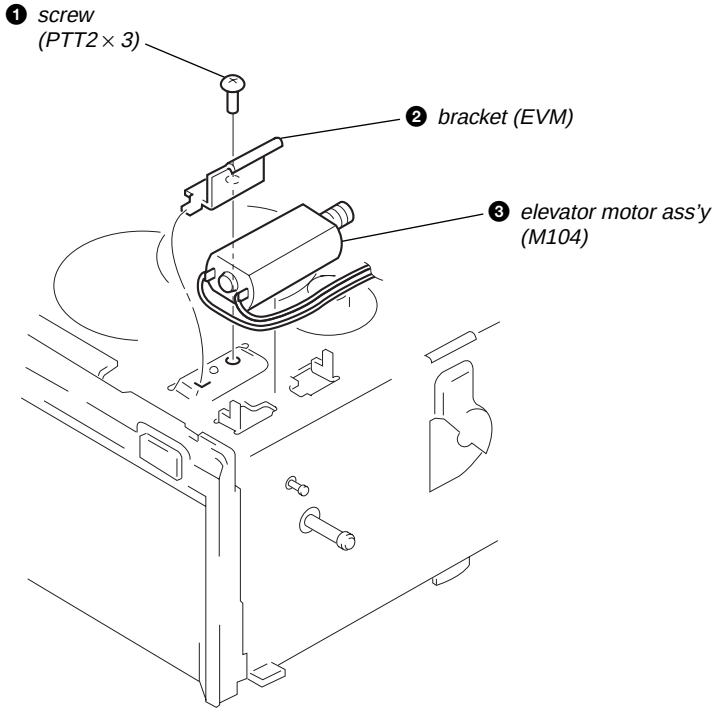
JACK BOARD



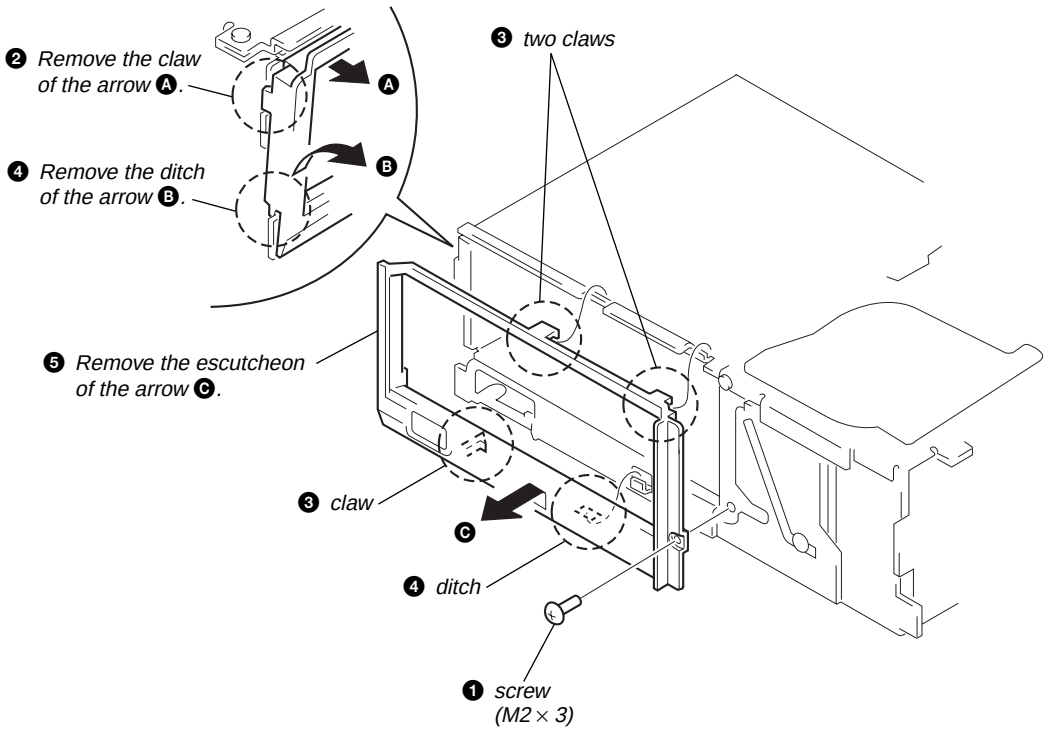
MAIN BOARD


❶ main flexible board (CNJ12)
❻ three screws (FP)
❼ main board
❷ connector (CNP301)
❺ two precision screws (P1.7 × 2.5)
❸ screw (BVTT2 × 4)
❹ heat sink

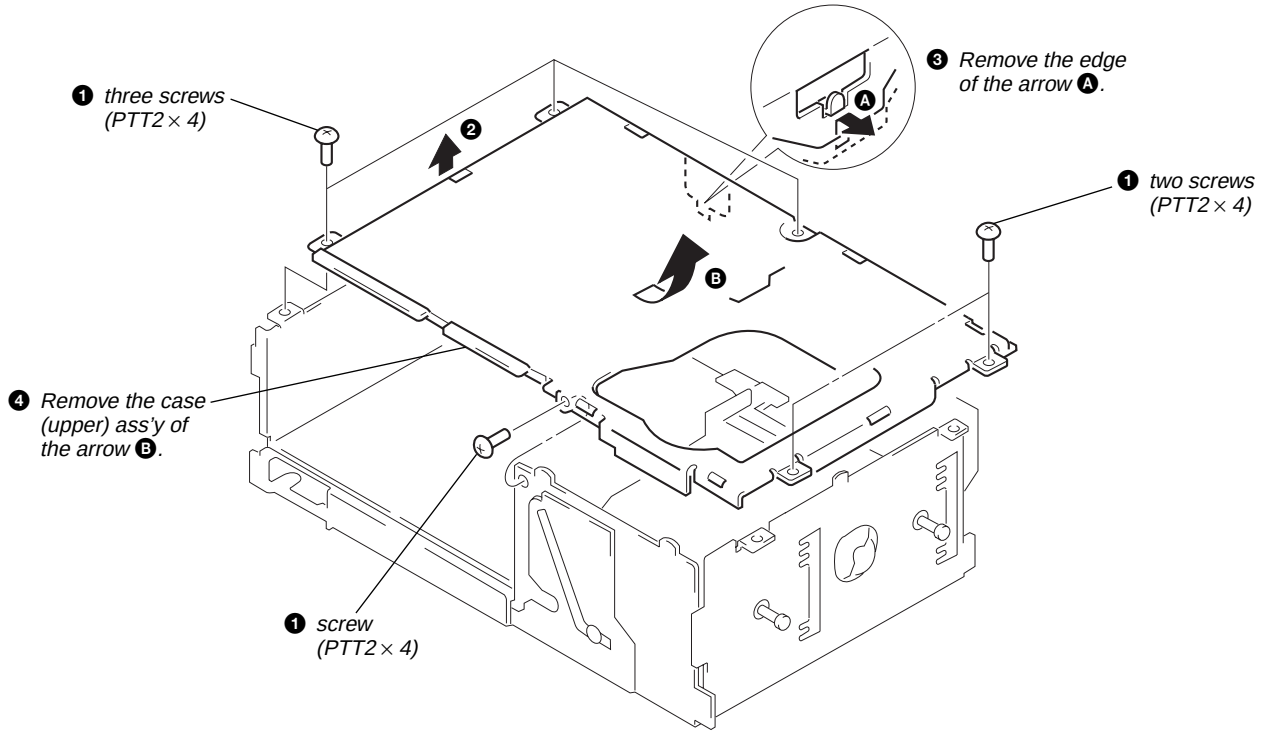
ELEVATOR MOTOR ASS'Y (M104)



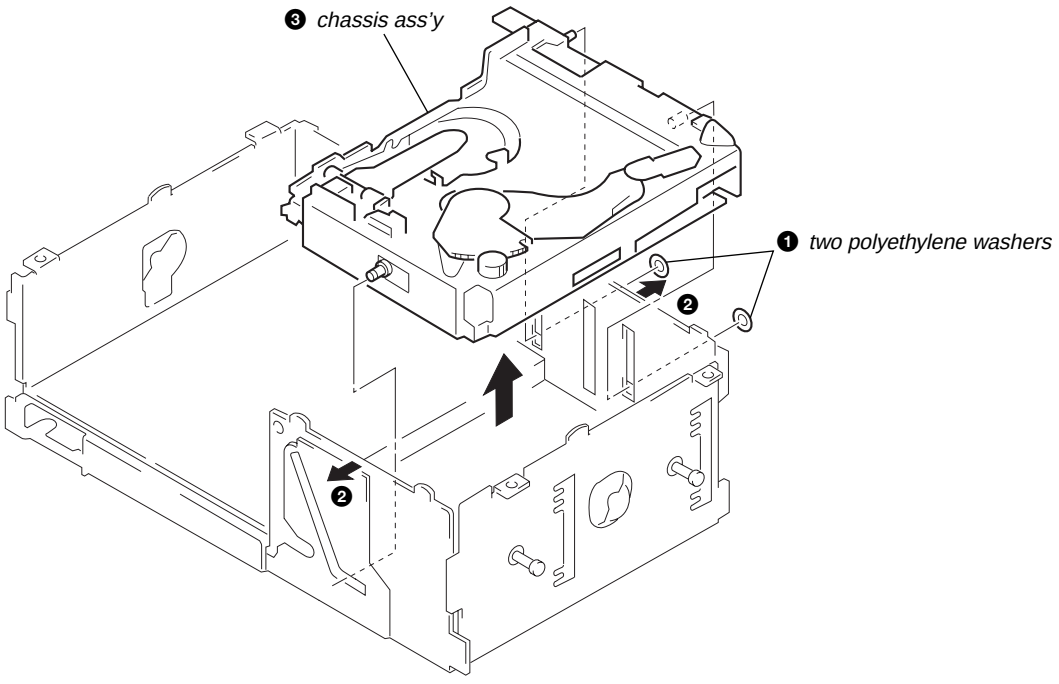
ESCUTCHEON



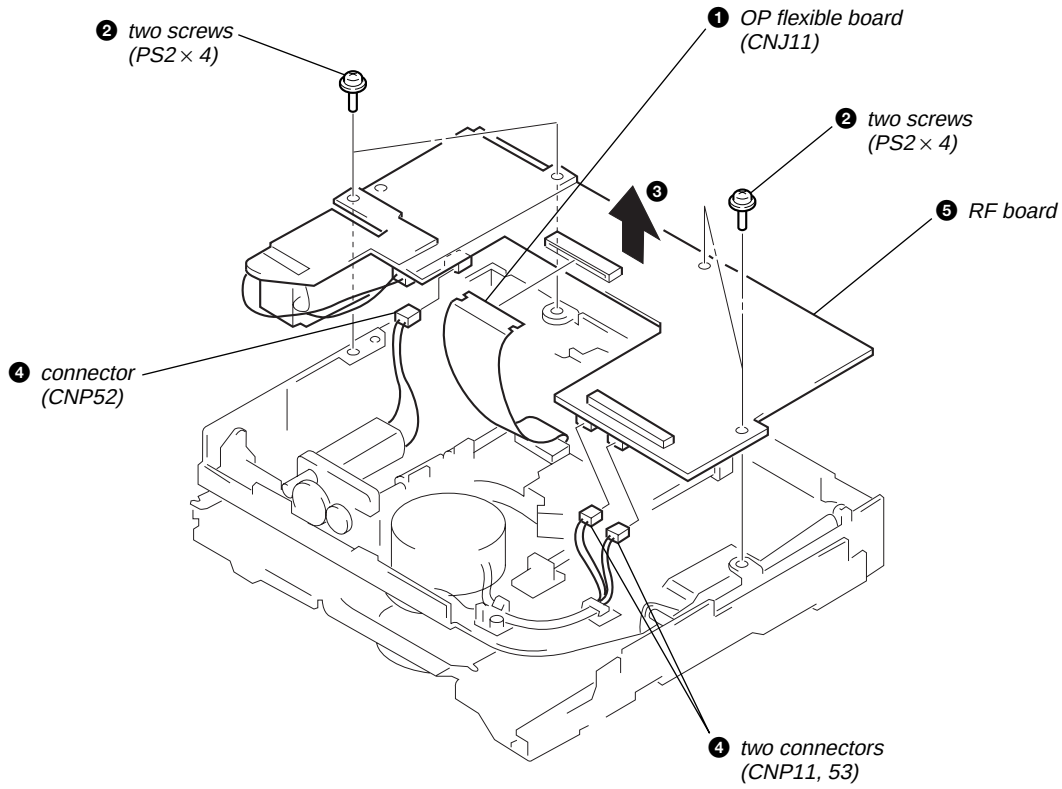
CASE (UPPER) ASS'Y


❶ three screws (PTT2 × 4)
❷
❸ Remove the edge of the arrow Ⓐ.
Ⓐ
❶ two screws (PTT2 × 4)
Ⓑ
❹ Remove the case (upper) ass'y of the arrow Ⓑ.
❶ screw (PTT2 × 4)

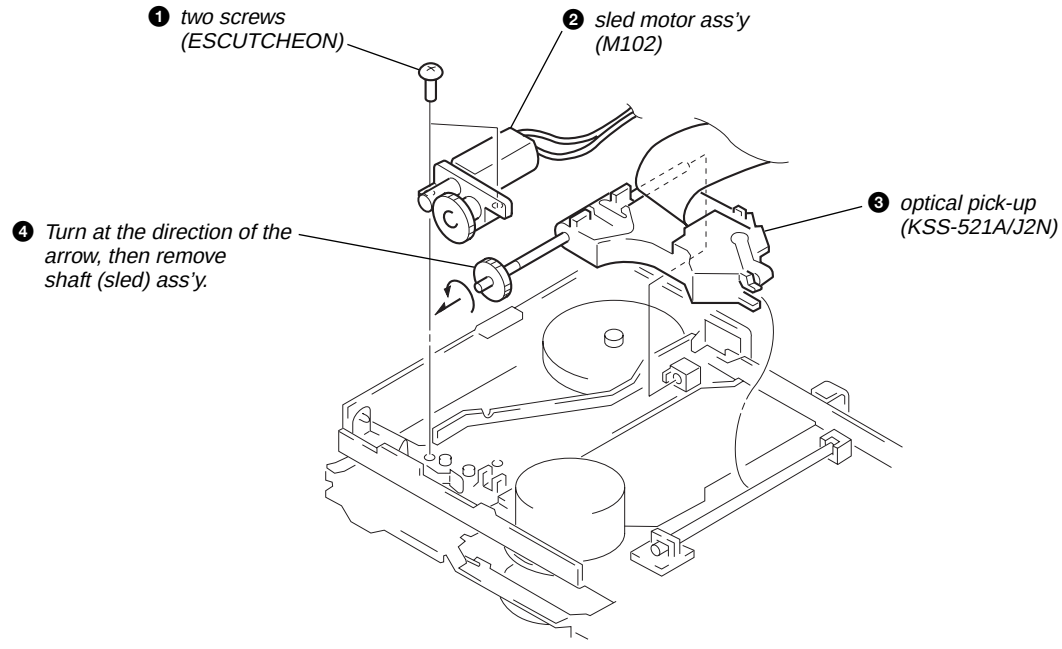
CHASSIS ASS'Y



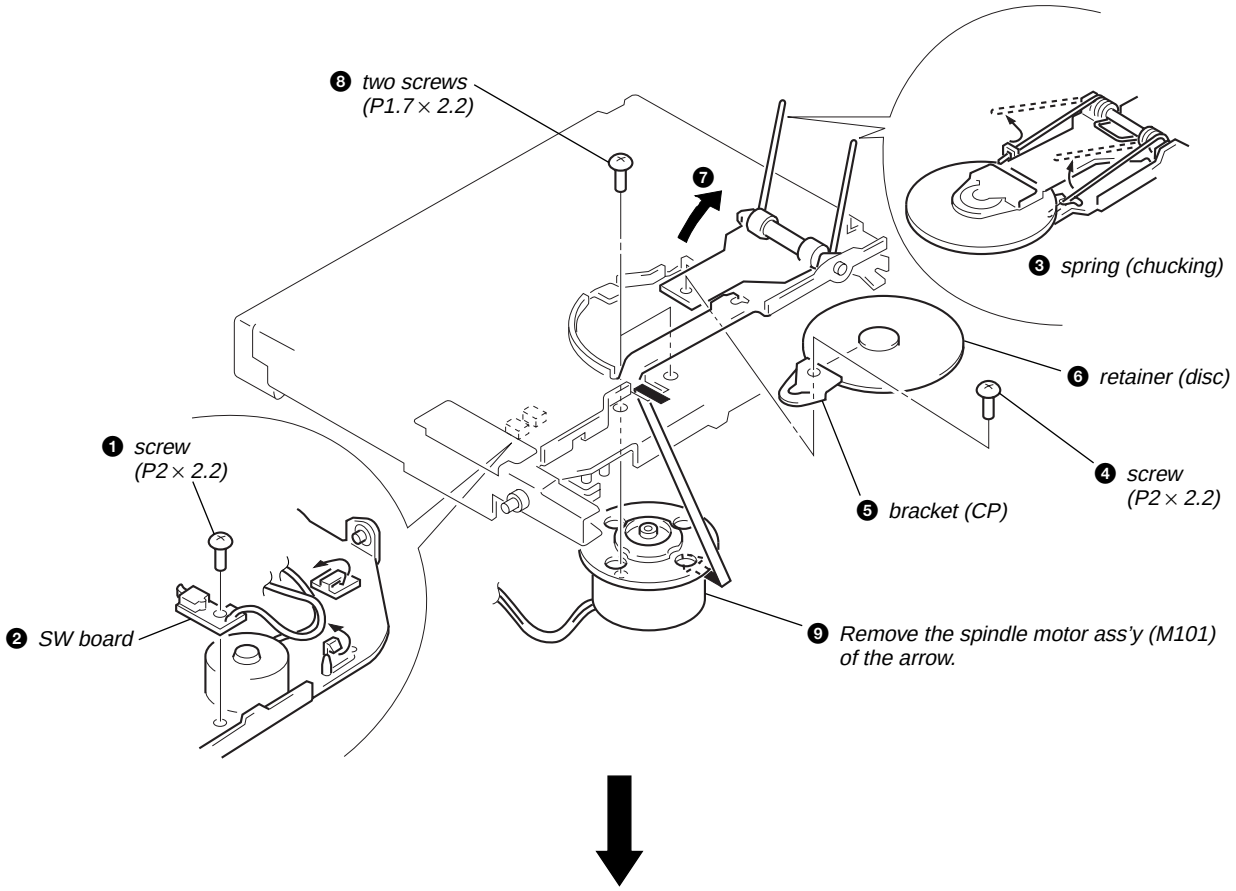
RF BOARD



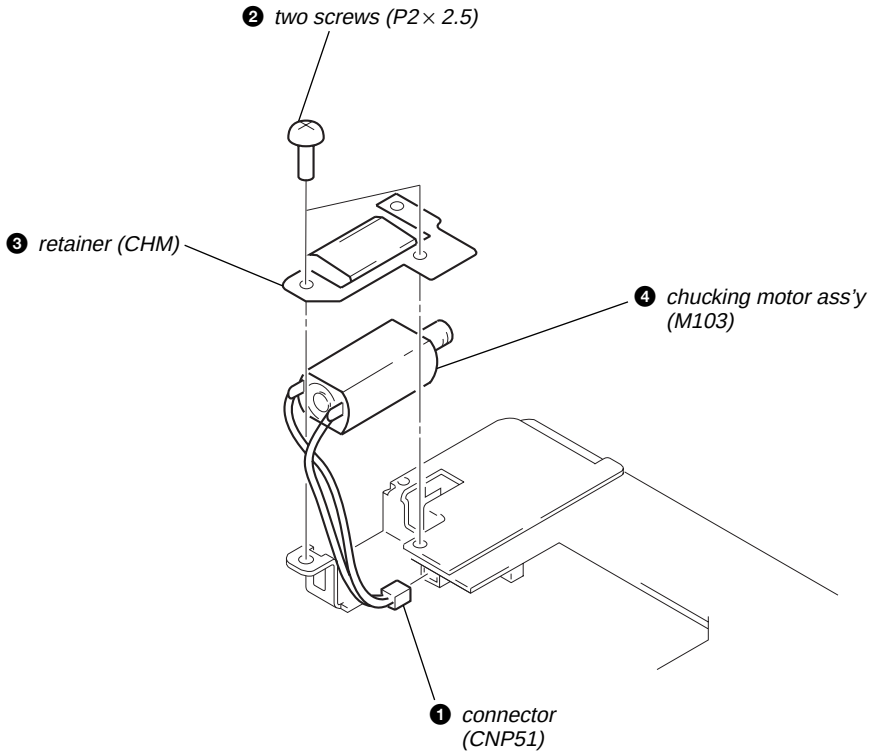
SLED MOTOR ASS'Y (M102), OPTICAL PICK-UP (KSS-521A/J2N)



SW BOARD, SPINDLE MOTOR ASS'Y (M101)



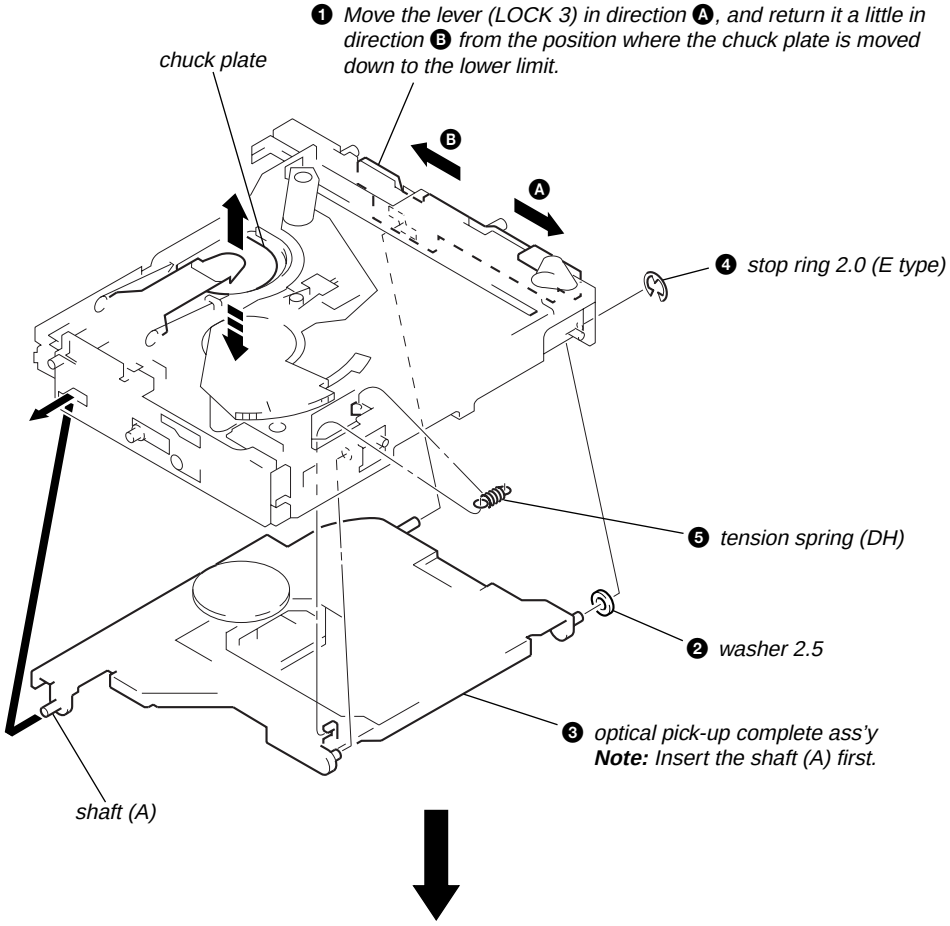
CHUCKING MOTOR ASS'Y (M103)



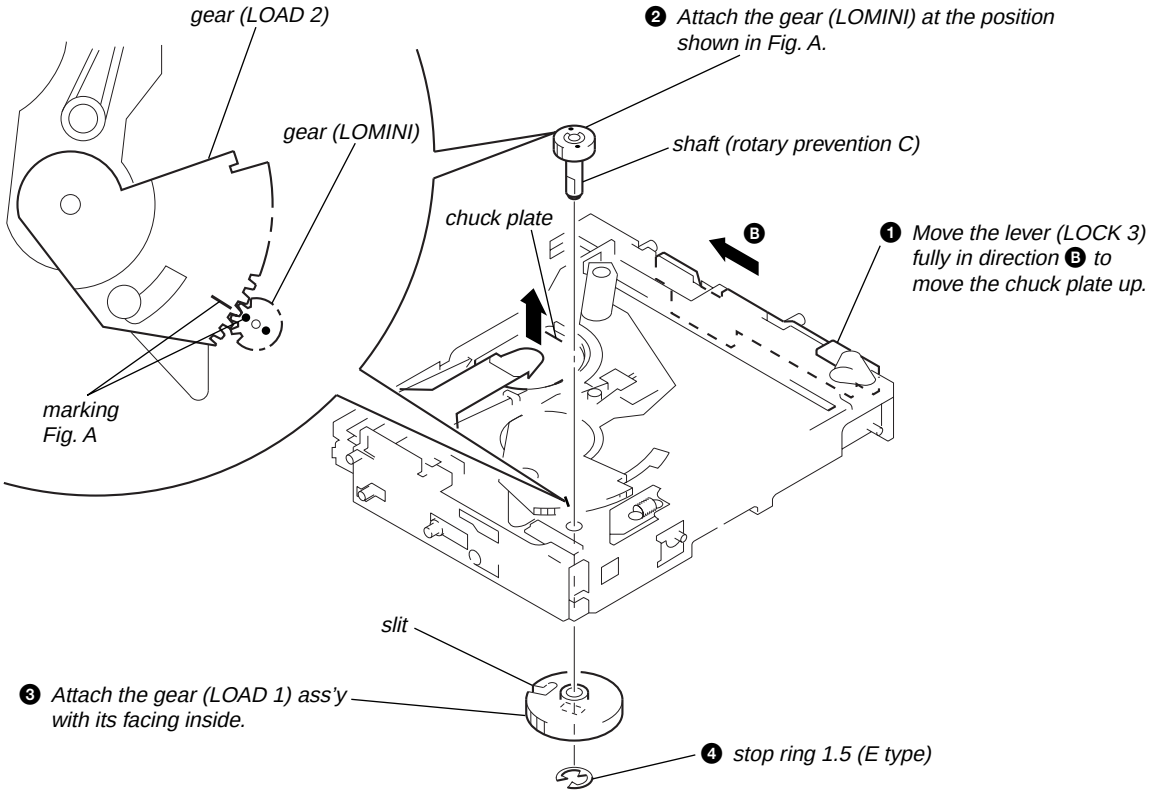
SECTION 4
MECHANISM DECK ASSEMBLY

Note: Follow the assembly procedure in the numerical order given.

OPTICAL PICK-UP COMPLETE ASS'Y

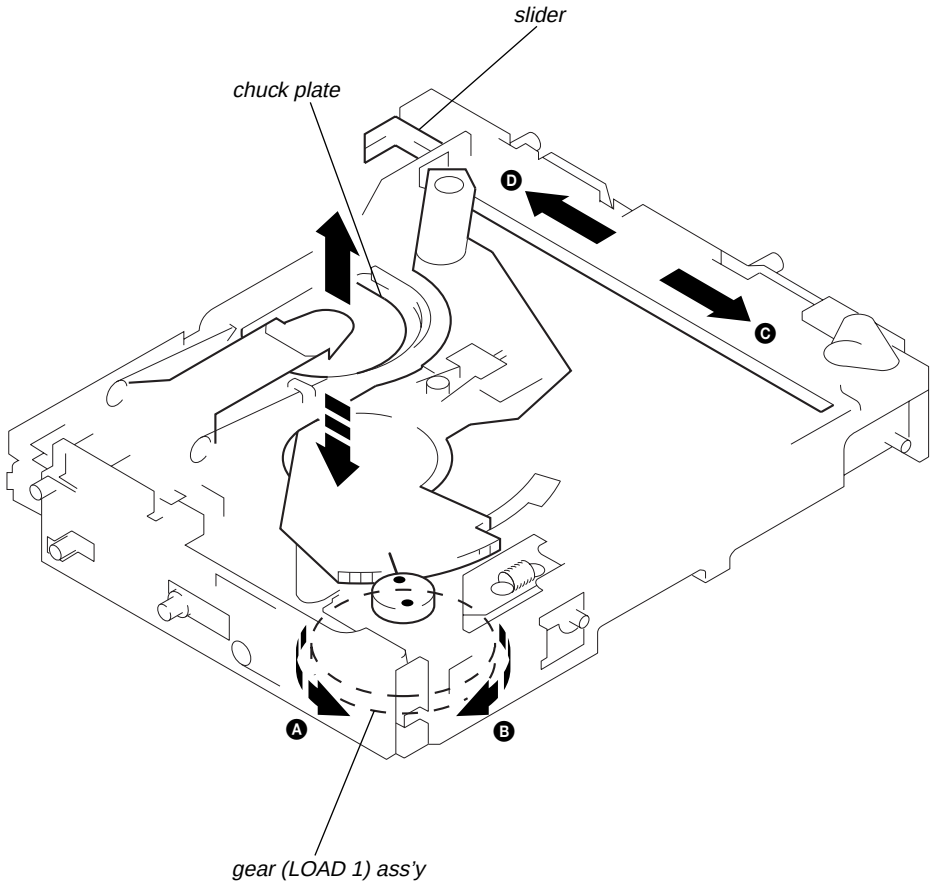

❶ Move the lever (LOCK 3) in direction Ⓐ, and return it a little in direction Ⓑ from the position where the chuck plate is moved down to the lower limit.
chuck plate
Ⓑ
Ⓐ
❹ stop ring 2.0 (E type)
❺ tension spring (DH)
❷ washer 2.5
❸ optical pick-up complete ass'y
Note: Insert the shaft (A) first.
shaft (A)

GEAR (LOMINI)/(LOAD 1) ASS'Y


gear (LOAD 2)
❷ Attach the gear (LOMINI) at the position shown in Fig. A.
gear (LOMINI)
shaft (rotary prevention C)
chuck plate
Ⓑ
❶ Move the lever (LOCK 3) fully in direction Ⓑ to move the chuck plate up.
marking
Fig. A
slit
❸ Attach the gear (LOAD 1) ass'y with its facing inside.
❹ stop ring 1.5 (E type)

OPERATION CHECK

❶ *Confirm that the slider moves in direction Ⓒ to move down the chuck plate if the gear (LOAD 1) is rotated in direction Ⓐ or the chuck plate moves up and the slider moves in direction Ⓓ if the gear is rotated in direction Ⓑ.*

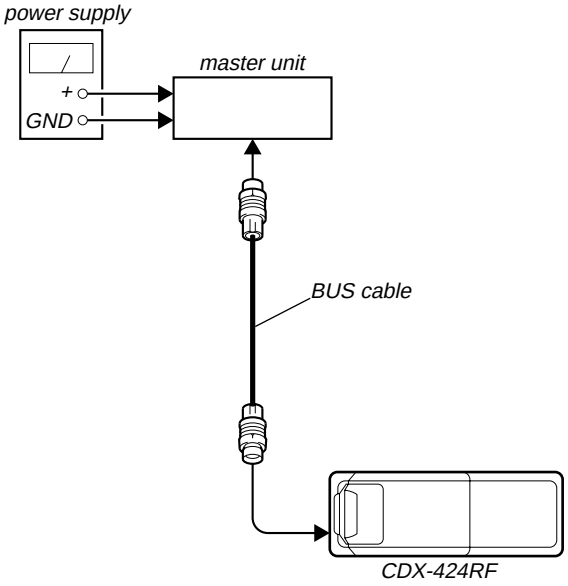


SECTION 5
MECHANICAL ADJUSTMENTS

• Elevator Height (Address) Adjustment

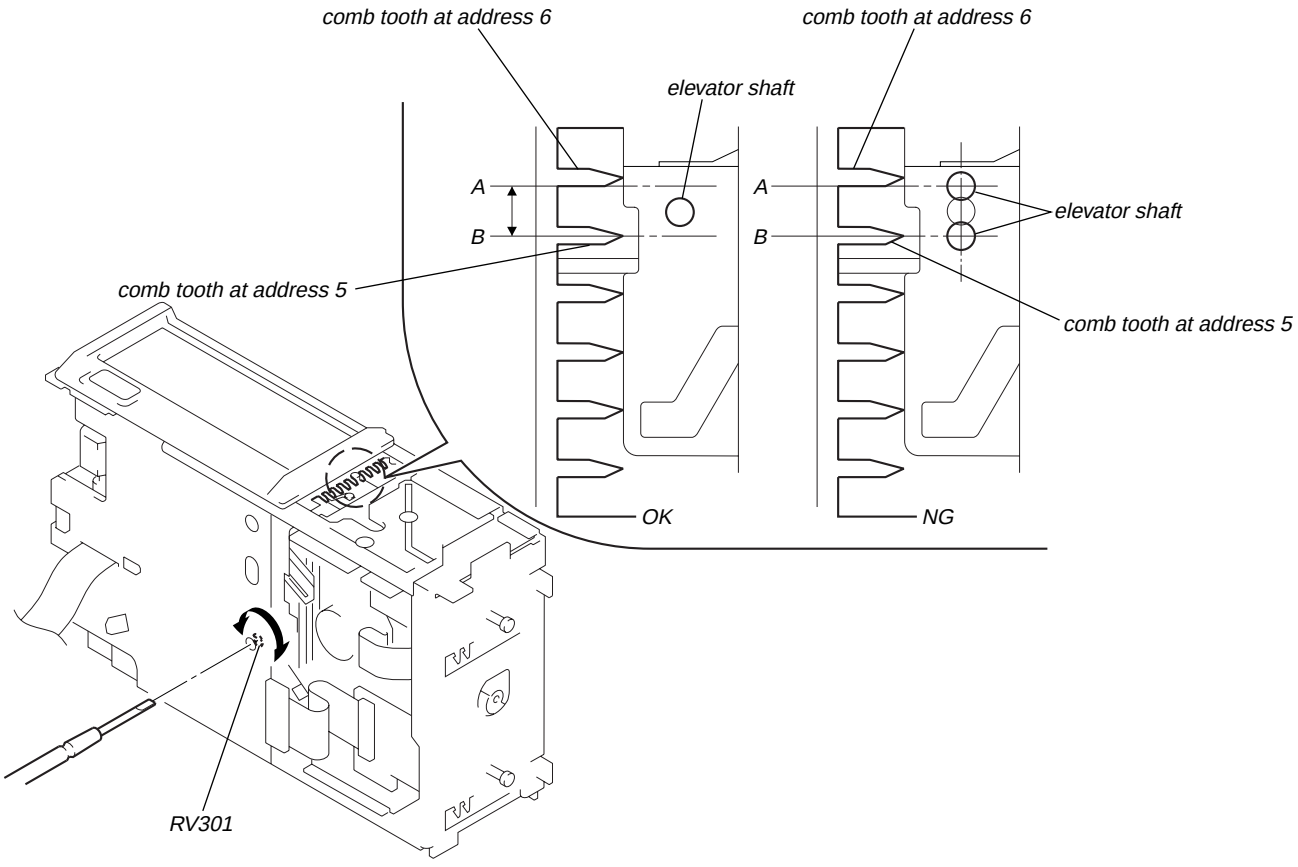
Note: This adjustments is necessary when the system controller (IC302), variable resistor (RV301), slider (R), slider (L), or chassis (ELV) was replaced for any repair.

Connection:



Adjustment Method:

1. Connect this set to the master unit (e.g. MDX-C670/C670RDS), load a disc magazine, and place the set vertically as shown below.
2. Connect the regulated power supply to the master unit, and turn the power on.
3. Press the DISC button on the master unit and select DISC 5.
4. At this time, if the elevator shaft does not position between comb teeth A and B at addresses 5 and 6 as shown below, adjust the following.
5. Press repeatedly the DISC + and – buttons on the master unit so that the elevator shafts moves from address 6 to address 5, or from 5 to 6. At this time, adjust RV301 on the main board so that the elevator shaft positions smoothly between comb teeth A and B.
6. Further, place the set horizontally and make same adjustment as mentioned above.
7. After adjustment at addresses 5 to 6 is finished, check all operations from addresses 1 to 10 with the set placed vertically and horizontally respectively to confirm that the elevator shaft positions in a range between comb teeth A to B.

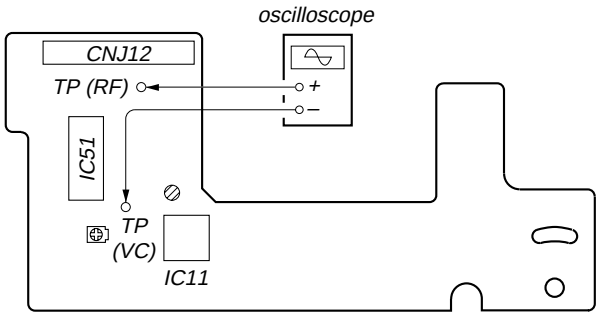


SECTION 6
ELECTRICAL ADJUSTMENTS

Note:
1. Perform adjustments as given.
2. Power supply voltage: DC14.4 V (more than 3A).

• FOCUS BIAS CHECK

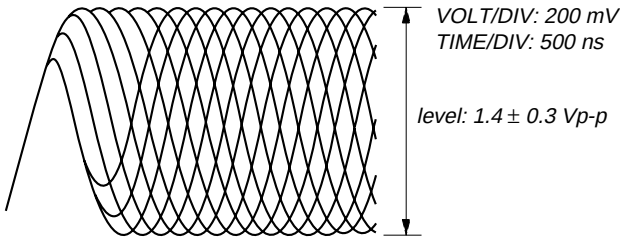
[RF BOARD] – Conductor Side –



Procedure:
1. Connect the oscilloscope to TP (RF) and TP (VC) on the RF board.
2. Put the set into play mode by loading the disc.
3. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

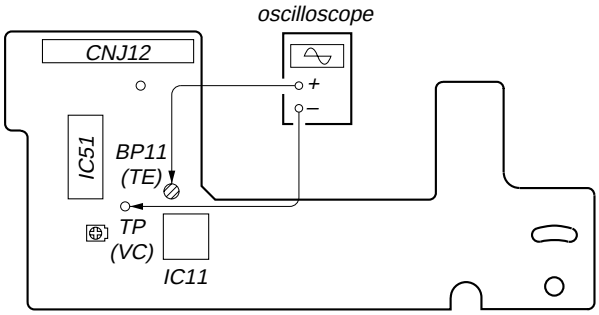
Note:
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



• TRACKING OFFSET CHECK

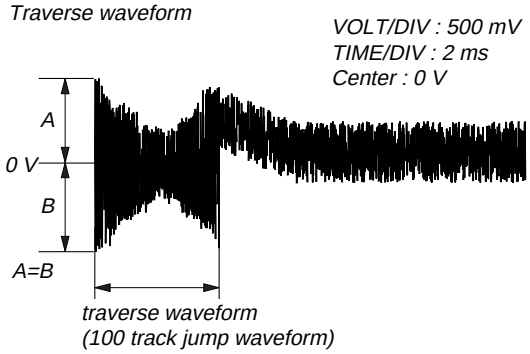
[RF BOARD] – Conductor Side –



Procedure:
1. Connect the oscilloscope to BP11 (TE) and TP (VC) on the RF board.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ button, and check the traverse waveform*.
4. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0 V dc, and check this level.

* Traverse waveform: This is the tracking error wave form appears when crossing the track.

Traverse waveform

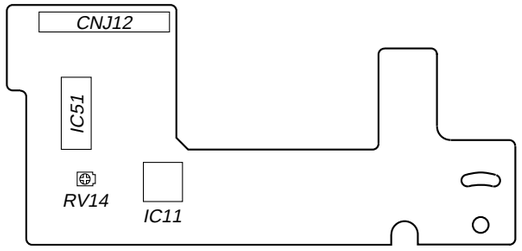


• FOCUS GAIN ADJUSTMENT (COARSE ADJUSTMENT)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV14

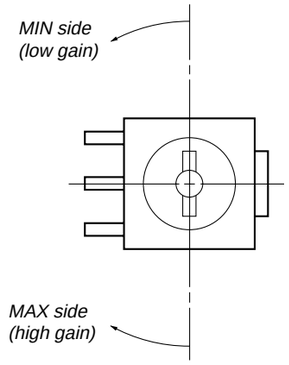
[RF BOARD] – Conductor Side –



Procedure:

1. Set RV14 (RF board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis devise. If there is, turn RV14 slightly clockwise.

[RF BOARD] – Conductor Side –



RV14 standard position

- **When gain is lowered...**
  The set does not play because of no focus operation.
- **When gain is highered...**
  Operation noise is heard due to a scratch or a dust, then operation will be unstable.

SECTION 7
DIAGRAMS

7-1. NOTES FOR PRINTED WIRING BOARD AND SCHEMATIC DIAGRAM

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

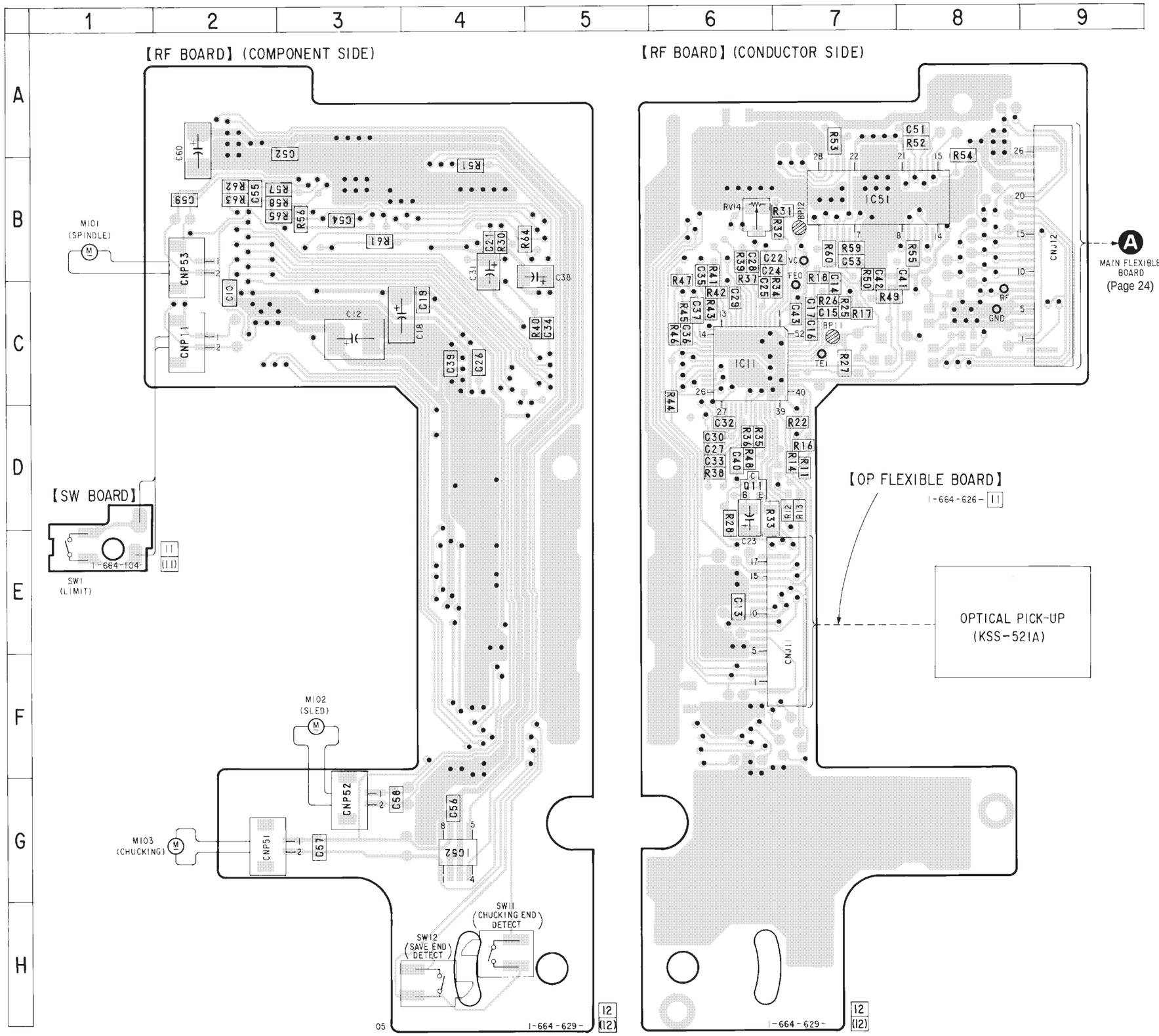
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed from CD changer controller.
- Voltages and waveforms are dc with respect to ground in playback mode.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

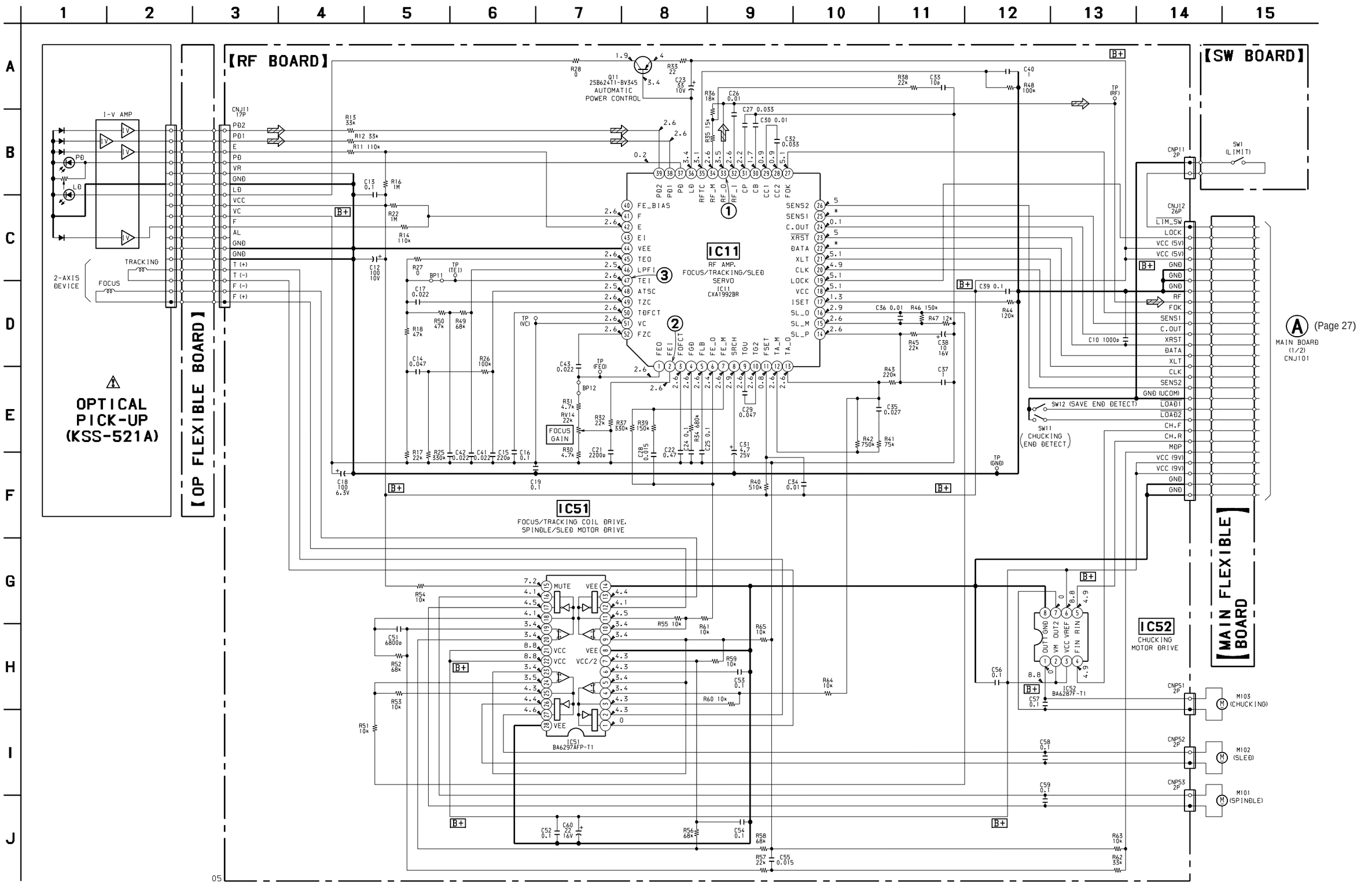
7-2. PRINTED WIRING BOARDS – RF Section –

• **Semiconductor Location**

Ref. No.	Location
IC11	C-6
IC51	B-7
IC52	G-4
Q11	D-6



7-3. SCHEMATIC DIAGRAM – RF Section – • See page 31 for Waveforms. • See page 32 for IC Block Diagrams.

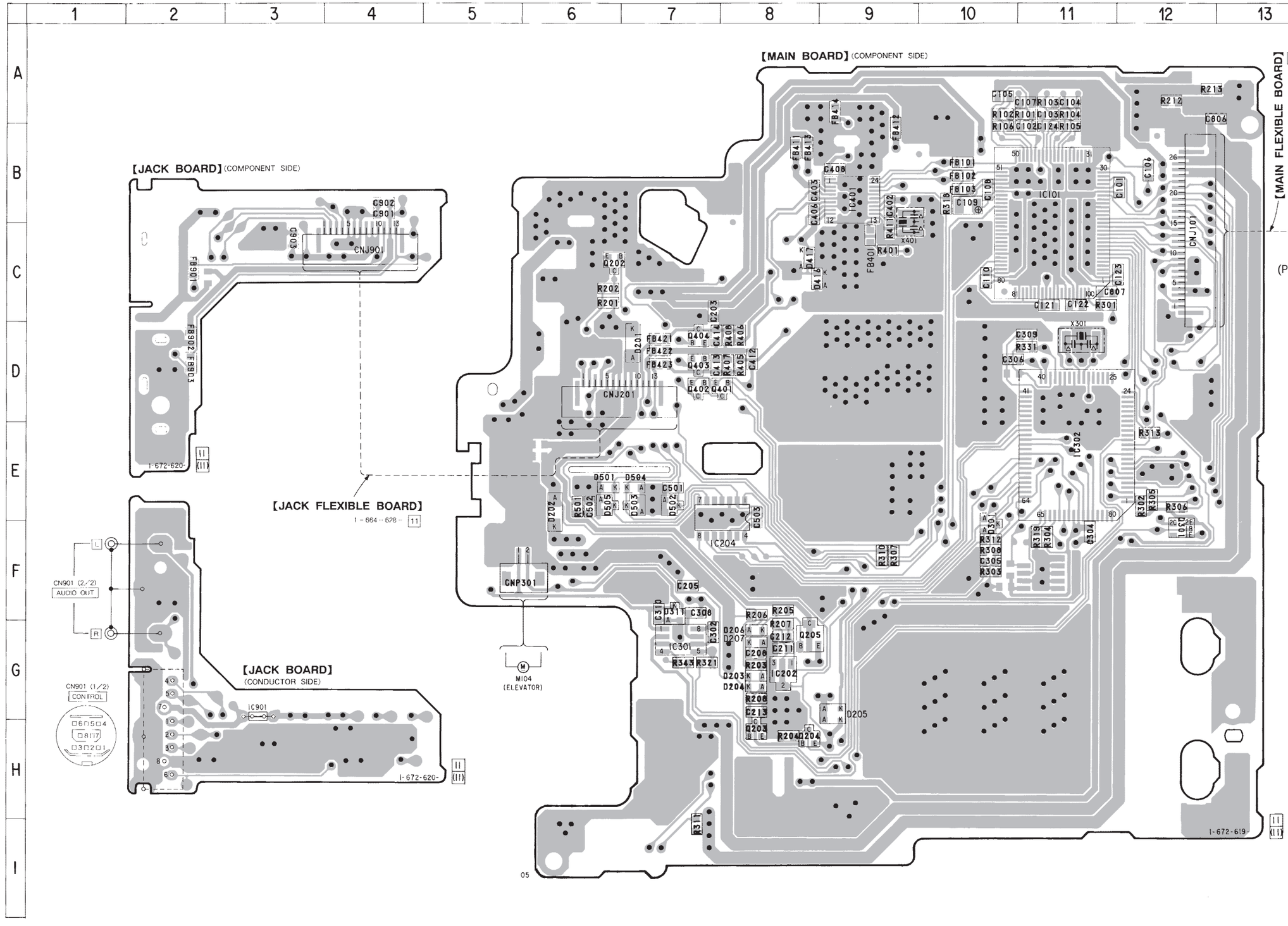


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

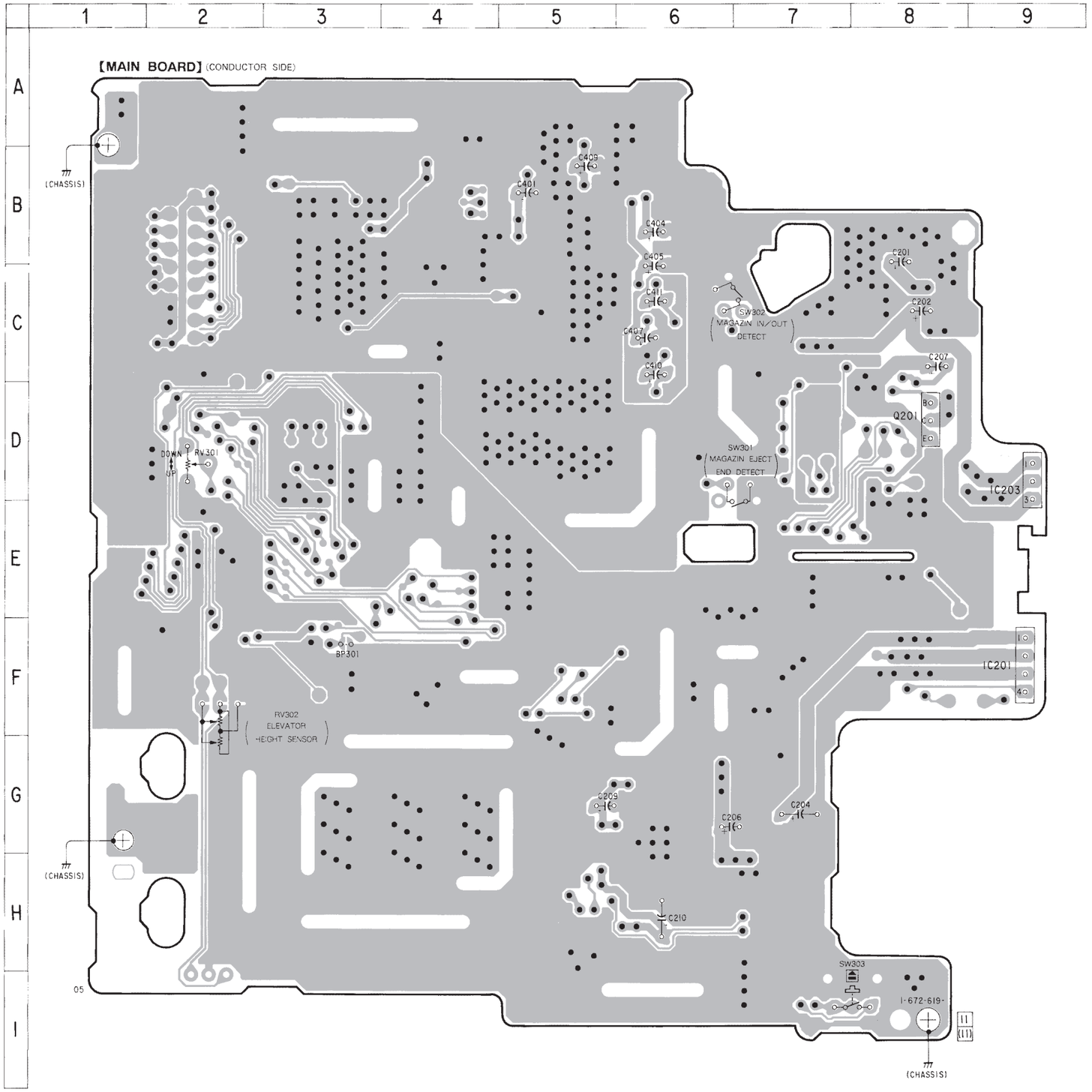
7-4. PRINTED WIRING BOARDS – MAIN (Component Side)/JACK Board –

- **Semiconductor Location**

Ref. No.	Location
D201	D-7
D202	E-6
D203	G-8
D204	G-8
D205	G-9
D206	G-8
D207	G-8
D301	F-10
D311	F-7
D416	C-8
D417	C-8
D501	E-6
D502	E-7
D503	E-7
D504	E-7
D505	E-6
IC101	B-11
IC202	G-8
IC204	E-8
IC301	G-7
IC302	E-11
IC401	B-9
Q202	C-6
Q203	H-8
Q204	H-8
Q205	G-8
Q301	F-12
Q401	D-8
Q402	D-7
Q403	D-7
Q404	D-7



7-5. PRINTED WIRING BOARD – MAIN Board (Conductor Side) –

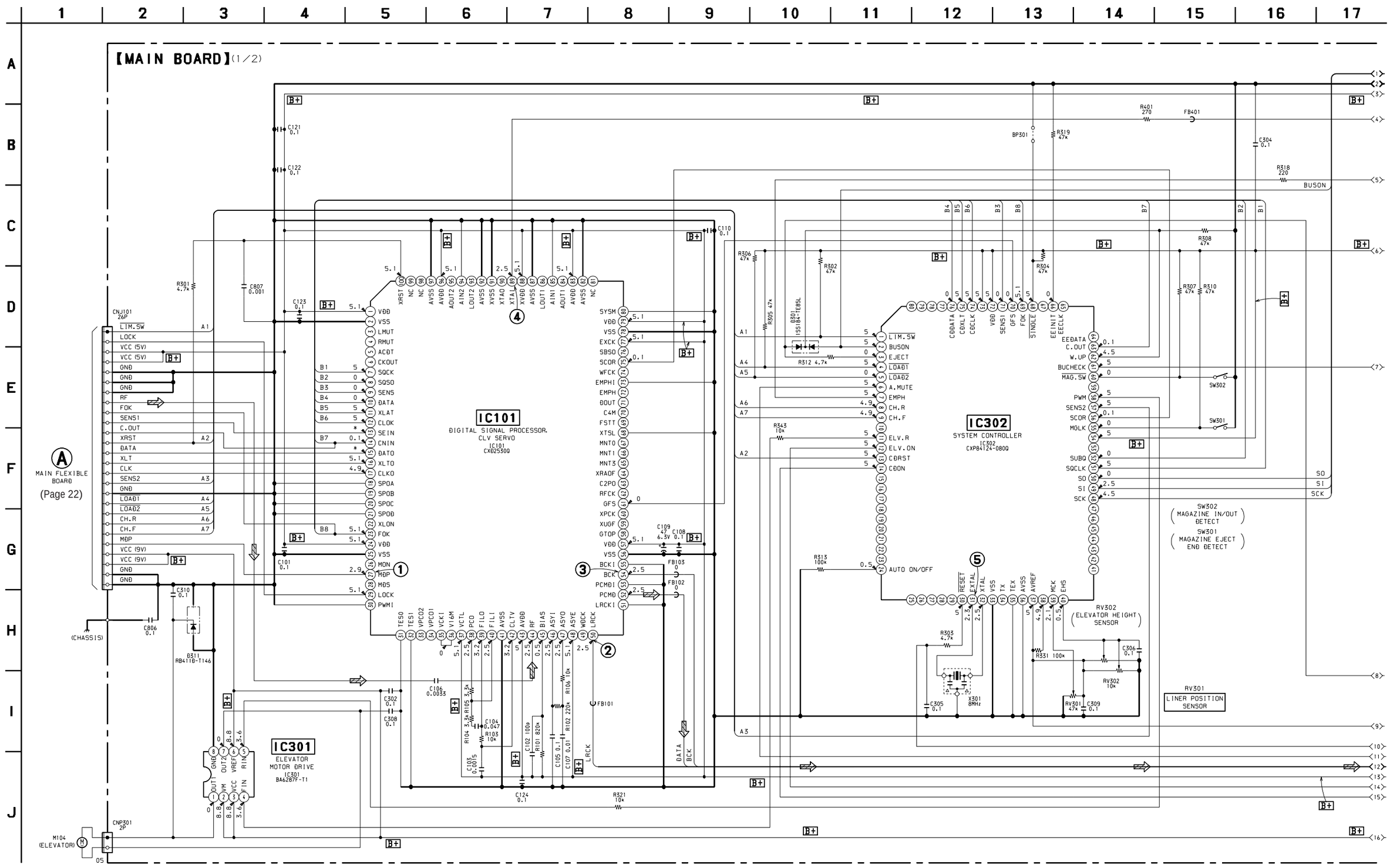


- **Semiconductor Location**

Ref. No.	Location
IC201	F-9
IC203	D-9
Q201	D-8

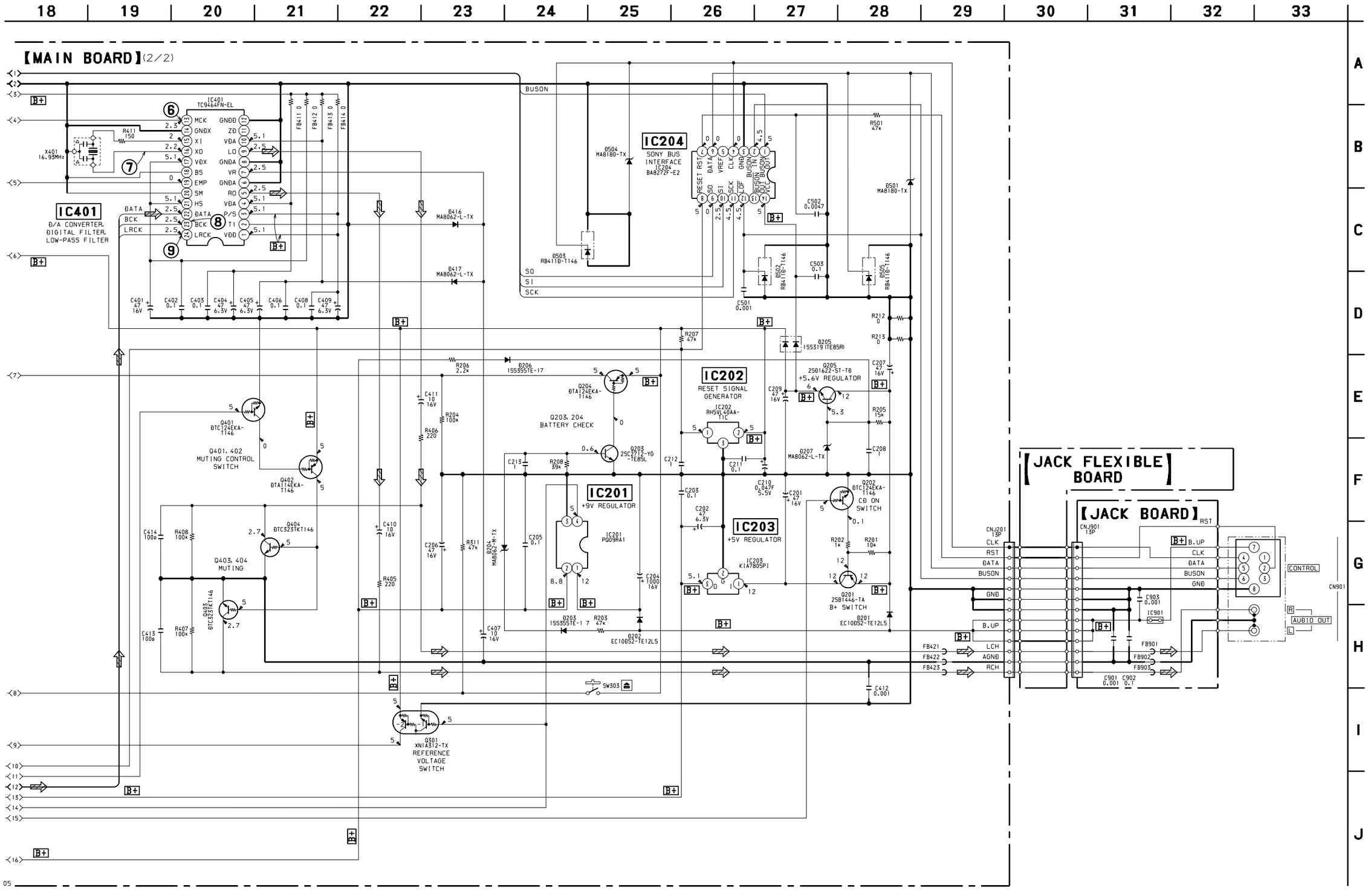
7-6. SCHEMATIC DIAGRAM – MAIN Section (1/2) –

• See page 31 for Waveforms. • See page 33 for IC Block Diagrams.



7-7. SCHEMATIC DIAGRAM – MAIN Section (2/2) –

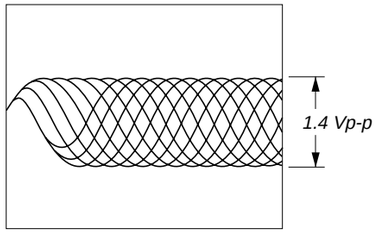
• See page 31 for Waveforms. • See page 33 for IC Block Diagrams.



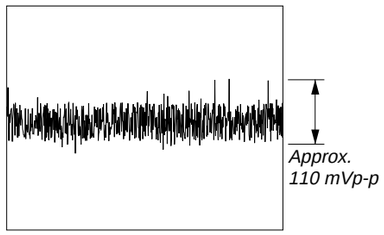
• Waveforms

– RF Board –

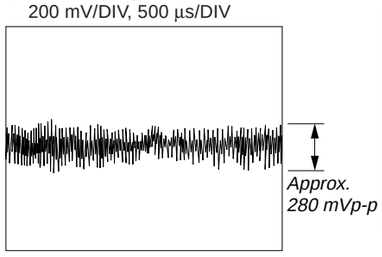
❶ IC11 ㉝ (RF O)
500 mV/DIV, 500 ns/DIV



❷ IC11 ② (FEI)
50 mV/DIV, 1 µs/DIV

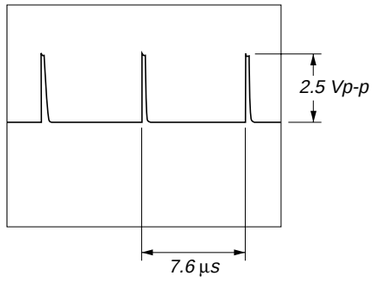


❸ IC11 ㊼ (TEI)
200 mV/DIV, 500 µs/DIV

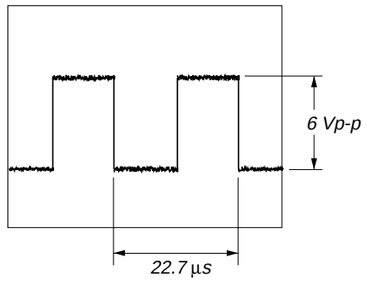


– MAIN Board (1/2) –

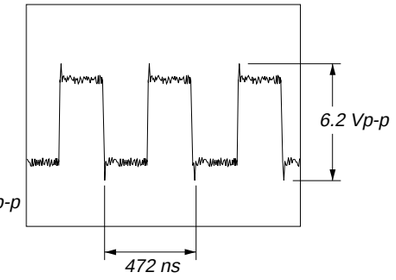
❶ IC101 ㉗ (MDP)



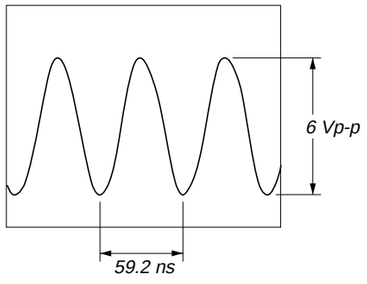
❷ IC101 ㊿ (LRCK)



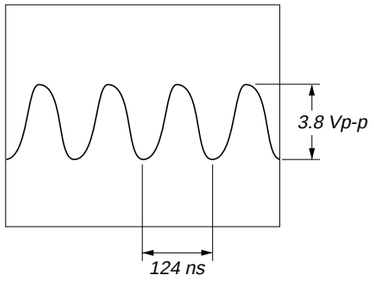
❸ IC101 ㊹ (BCK)



❹ IC101 ㊽ (XTAI)

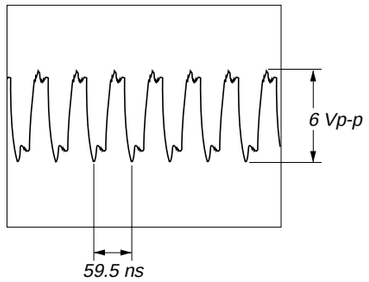


❺ IC302 ㉛ (EXTAL)

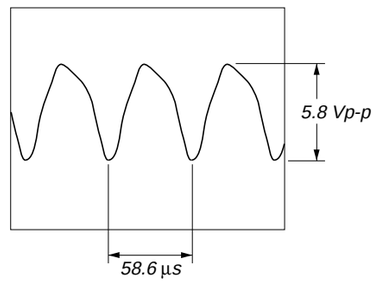


– MAIN Board (2/2) –

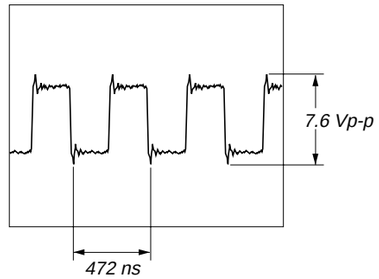
❻ IC401 ⑬ (MCK)



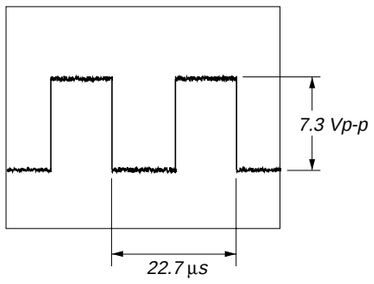
❼ IC401 ⑯ (XO)



❽ IC401 ㉓ (BCK)



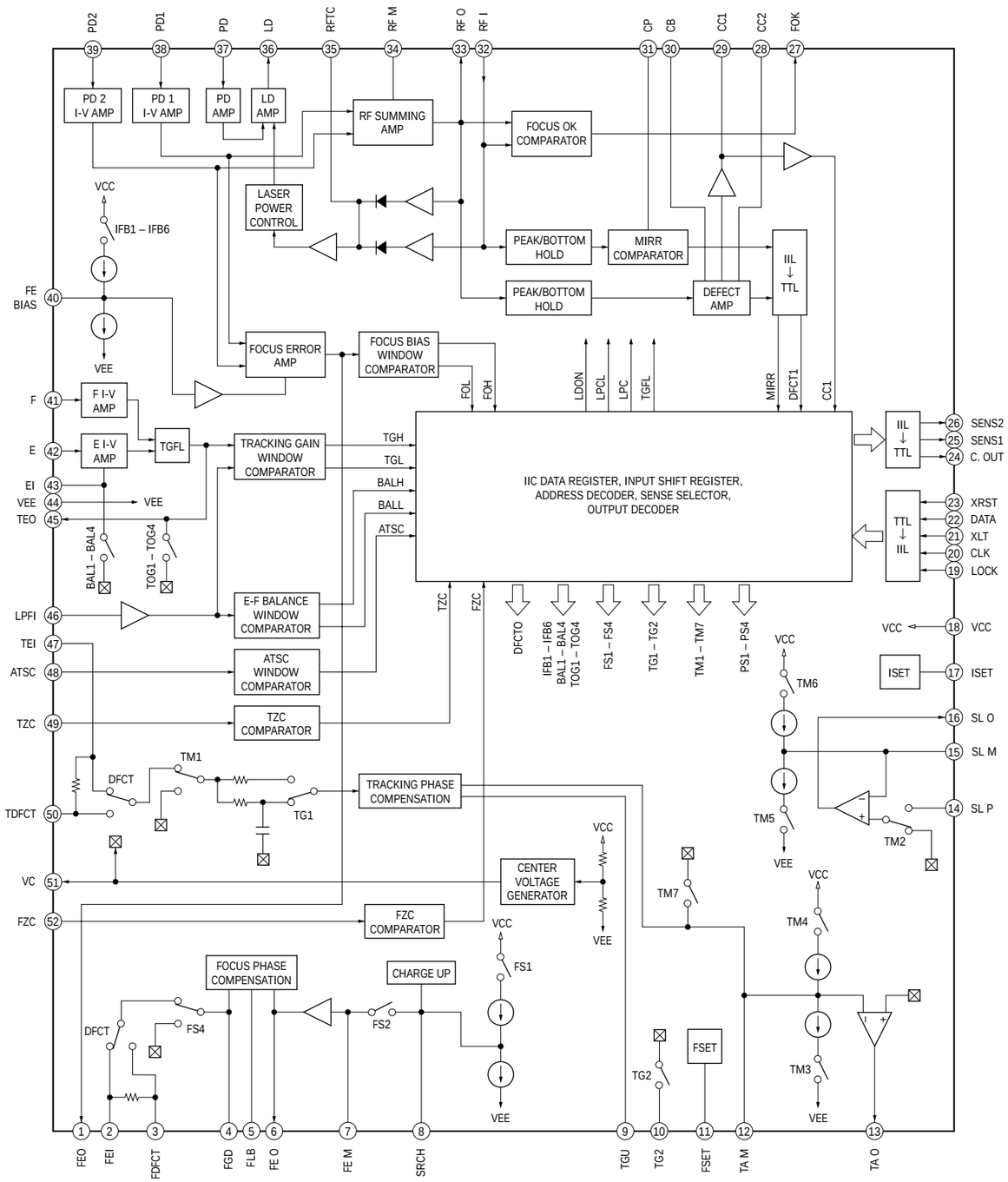
❾ IC401 ㉔ (LRCK)



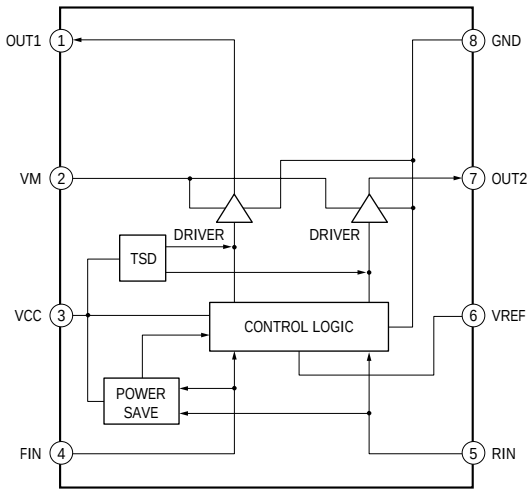
• IC Block Diagrams

– RF Board –

IC11 CXA1992BR

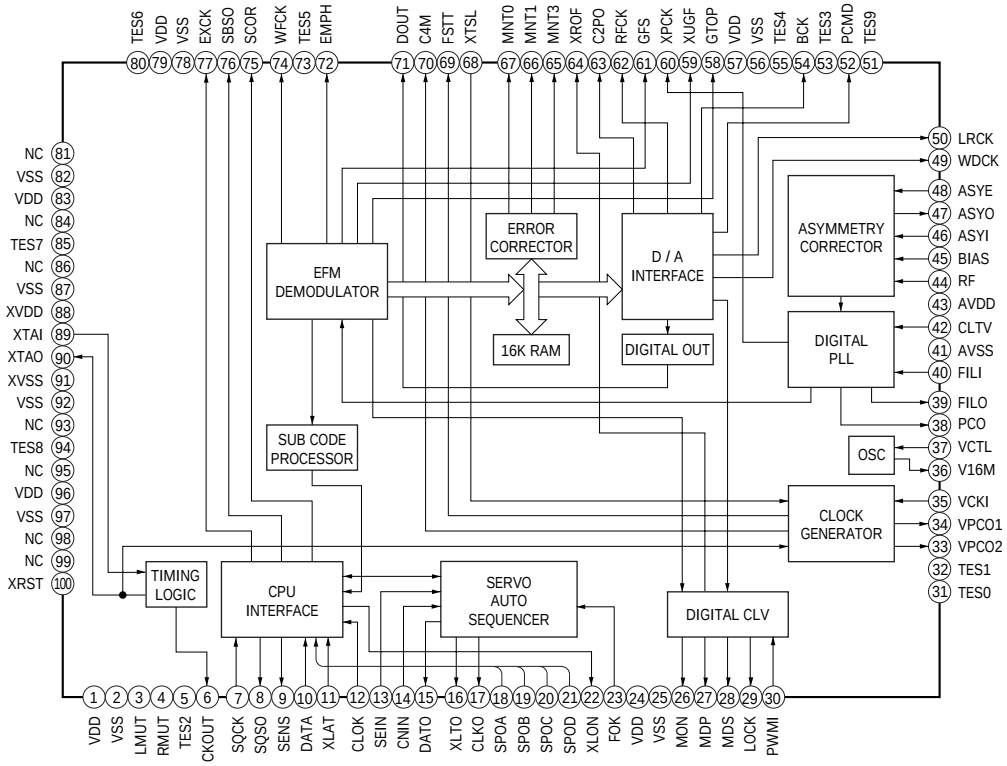


IC52 BA6287F

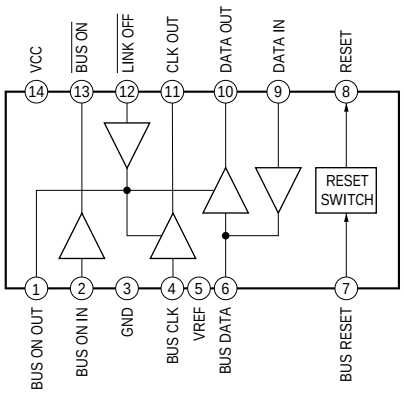


– MAIN Board –

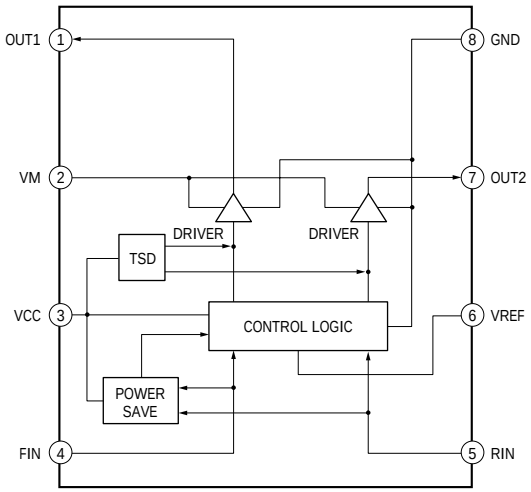
IC101 CXD2530Q



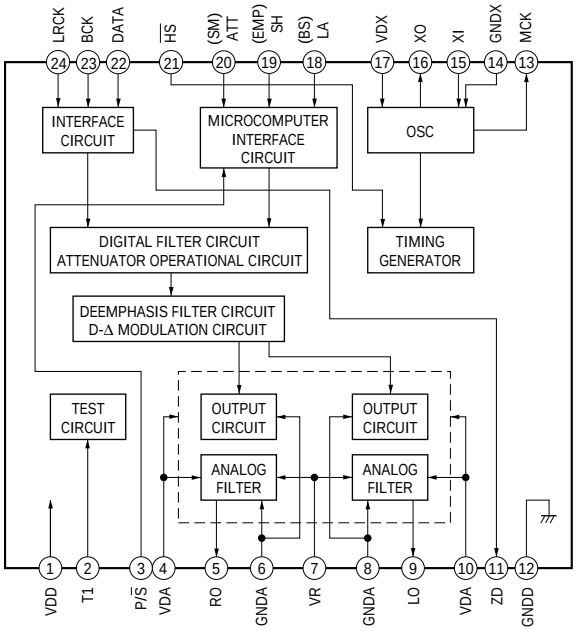
IC204 BA8272F-E2



IC301 BA6287F



IC401 TC9464FN-EL



7-8. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC302 CXP84124-080Q (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1	$\overline{\text{LIM.SW}}$	I	Sled limit in detect switch (SW1) input terminal "L": When the optical pick-up is inner position
2	BUSON	I	Bus on/off control signal input from the SONY bus interface (IC204) "H": bus on
3	EJECT	I	Eject switch (SW303) input terminal "H" active
4	$\overline{\text{LOAD1}}$	I	Save end detect switch (SW12) input terminal "L": When completion of the disc chucking operation
5	$\overline{\text{LOAD2}}$	I	Chucking end detect switch (SW11) input terminal "L": When completion of the disc chucking operation
6	A.MUTE	O	Audio line muting on/off control signal output terminal "H": muting on
7	EMPH	O	Emphasis mode output to the D/A converter (IC401) "L": emphasis on
8	CH.R	O	Motor drive signal (save direction) output to the chucking motor drive (IC52) "H" active *1
9	CH.F	O	Motor drive signal (load chucking direction) output to the chucking motor drive (IC52) "H" active *1
10	—	O	Not used (open)
11	ELV.R	O	Motor drive signal (elevator down direction) output to the elevator motor drive (IC301) "L" active *2
12	ELV.ON	O	Mechanism deck section power supply on/off control signal output "H": power on
13	$\overline{\text{CD RST}}$	O	System reset signal output to the CXA1992BR (IC11) and CXD2530Q (IC101) "L": reset
14	CDON	O	D/A converter and servo section power supply on/off control signal output "H": power on
15 to 23	—	O	Not used (open)
24	AUTO ON/OFF	I	Setting terminal for the automatic adjustment "L": automatic adjustment, "H": manual adjustment (fixed at "L" in this set)
25 to 29	—	O	Not used (open)
30	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC202) and SONY bus interface (IC204) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
31	EXTAL	I	Main system clock input terminal (8 MHz)
32	XTAL	O	Main system clock output terminal (8 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal Not used (open)
35	TEX	I	Sub system clock input terminal Not used (fixed at "L")
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
38	ATRIBT	I	Selection input of the custom file, D-BASS, etc.
39	MCK	I	Input of signal for the fine adjustment (linear position sensor adjustment; RV301) of elevator position (A/D input)
40	EHS	I	Elevator height position detect input from the RV302 (elevator height sensor) (A/D input)
41 to 47	—	O	Not used (open)
48	SCK	I	Serial data transfer clock signal input from the SONY bus interface (IC204)
49	SI	I	Serial data input from the SONY bus interface (IC204)
50	SO	O	Serial data output to the SONY bus interface (IC204)
51	SQCLK	O	Subcode Q data reading clock signal output to the CXD2530Q (IC101)
52	SUBQ	I	Subcode Q data input from the CXD2530Q (IC101)
53	—	O	Not used (open)
54	—	I	Not used (fixed at "H")
55	MGLK	I	Magazine eject operation completion detect switch (SW301) input terminal "L": eject completed

Pin No.	Pin Name	I/O	Function
56	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD2530Q (IC101)
57	SENS2	I	Internal status signal (sense signal) input from the CXA1992BR (IC11)
58	PWM	O	Motor drive signal (elevator up direction) output to the elevator motor drive (IC301) "L" active *2
59	—	O	Not used (open)
60	$\overline{\text{MAG.SW}}$	I	Magazine in/out detect switch (SW302) input terminal "L": magazine detected
61	BUCHECK	I	Battery detection signal input terminal "H": battery on
62	W.UP	I	Bus on or eject switch (SW303) input terminal "H": bus on or eject switch pushing
63	C.OUT	I	Track number count signal input from the CXA1992BR (IC11)
64	EEDATA	I/O	Two-way data bus with the EEPROM Not used (open)
65	EECLK	O	Serial clock signal output to the EEPROM Not used (open)
66	EEINIT	I	Initialize signal input for the EEPROM "H": format Fixed at "L" in this set
67	—	O	Not used (open)
68	$\overline{\text{SINGLE}}$	I	Setting terminal for the single disc/multiple discs mode "L": single mode, "H": multiple discs mode (fixed at "H")
69	FOK	I	Focus OK signal input from the CXA1992BR (IC11) "L": NG, "H": OK
70	GFS	I	Guard frame sync signal input from the CXD2530Q (IC101) "L": NG, "H": OK
71	SENS1	I	Internal status signal (sense signal) input from the CXD2530Q (IC101)
72	VDD	—	Power supply terminal (+5V)
73	NC (VDD)	—	Connected to the power supply (+5V)
74	CDCLK	O	Serial data transfer clock signal output to the CXD2530Q (IC101)
75	CDXLT	O	Serial data latch pulse signal output to the CXD2530Q (IC101)
76	CDDATA	O	Serial data output to the CXD2530Q (IC101)
77 to 80	—	O	Not used (open)

*1 chucking motor (M103) control

Mode / Terminal	STOP	LOAD CHUCKING	SAVE	BRAKE
CH.F (pin ⑨)	"L"	"H"	"L"	"H"
CH.R (pin ⑧)	"L"	"L"	"H"	"H"

*2 elevator motor (M104) control

Mode / Terminal	STOP	ELEVATOR UP	ELEVATOR DOWN	BRAKE
PWM (pin ㊽)	"H"	"L"	"H"	"L"
ELV.R (pin ⑪)	"H"	"H"	"L"	"L"

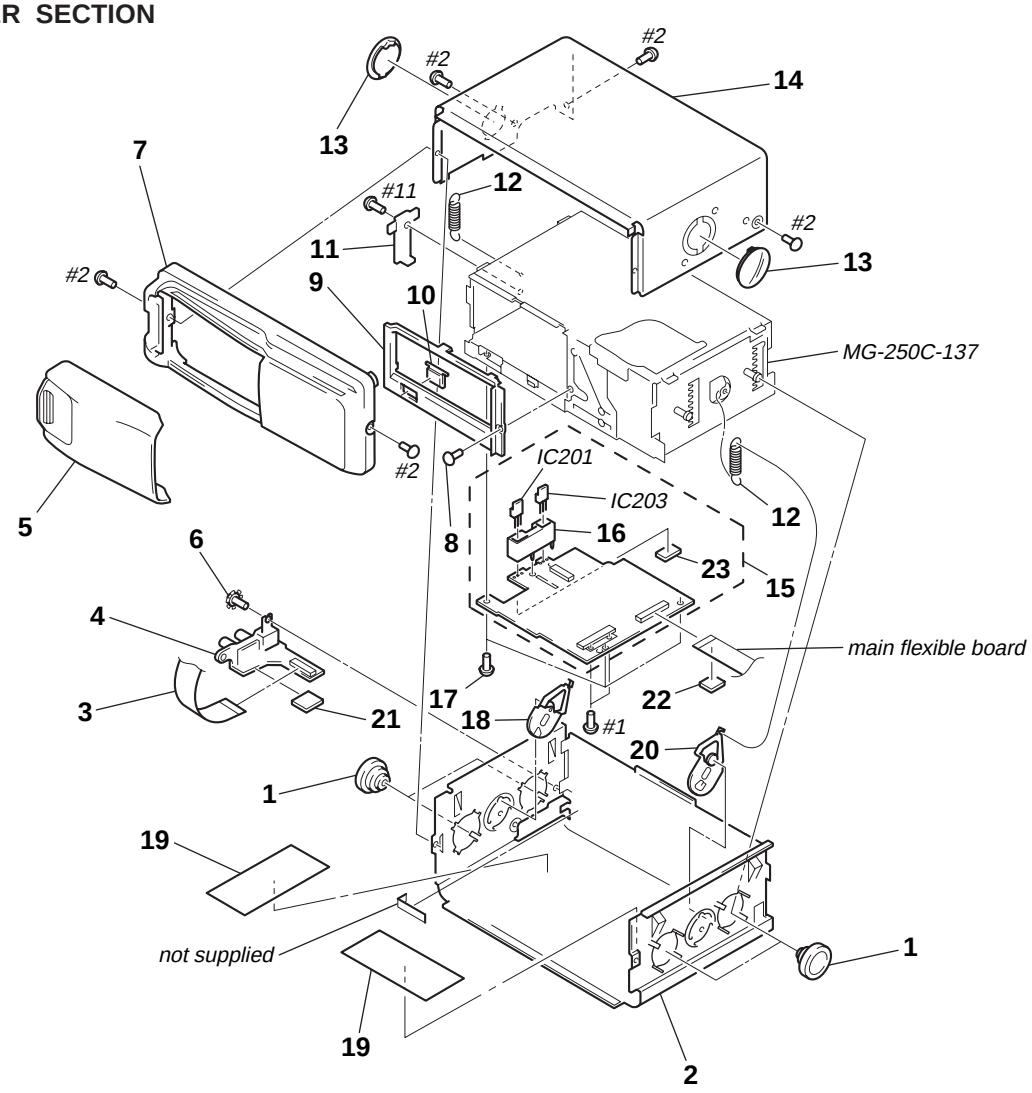
SECTION 8
EXPLODED VIEWS

NOTE:
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

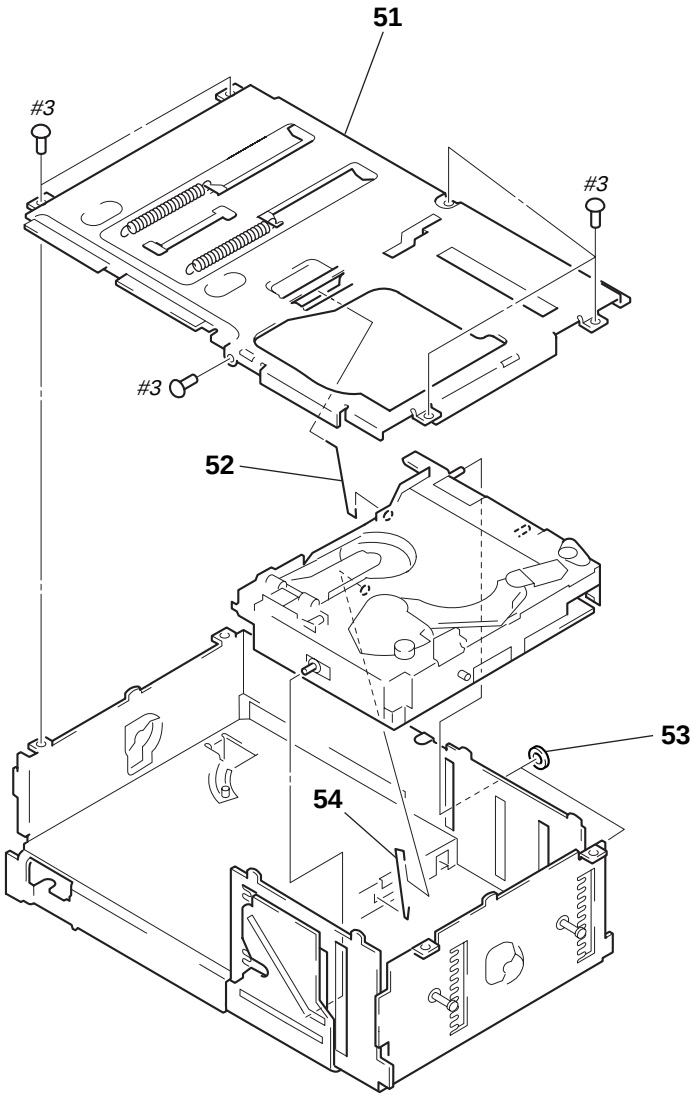
Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

(1) COVER SECTION



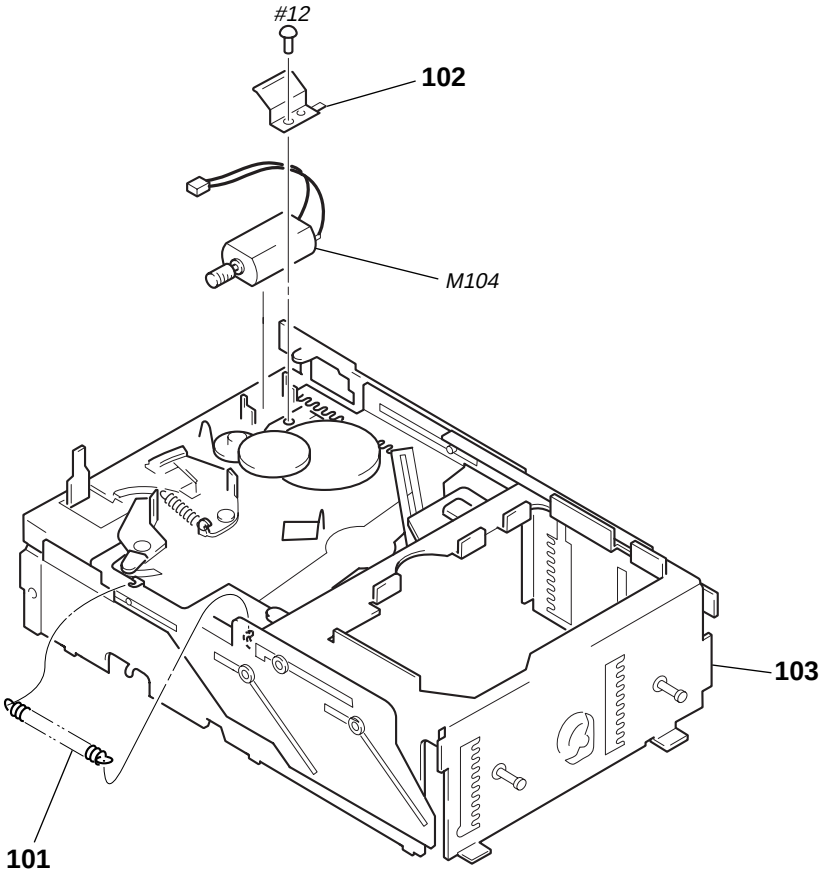
Ref. No.	Part No.	Description	Remark
1	3-010-104-01	DAMPER (250)	
* 2	3-010-097-01	COVER (LOWER) (US, Canadian)	
2	3-022-009-61	COVER (LOWER T) (E)	
3	1-664-628-11	JACK FLEXIBLE BOARD	
* 4	1-672-620-11	JACK BOARD	
5	X-3376-770-1	DOOR ASSY (US, Canadian)	
5	X-3376-773-1	DOOR (626T) ASSY (E)	
6	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
7	3-030-560-11	PANEL, FRONT (US, Canadian)	
7	3-022-002-81	PANEL(T), FRONT (E)	
8	3-012-388-01	SCREW (M2X3)	
* 9	3-010-105-01	ESCUTCHEON (US, Canadian)	
9	3-022-006-02	ESCUTCHEON (T) (E)	
* 10	3-010-106-01	BUTTON (EJ) (US, Canadian)	
10	3-022-007-02	BUTTON (EJT) (E)	
* 11	3-022-012-01	HEAT SINK (T)	
12	3-010-103-01	SPRING (FL), TENSION	
13	3-010-101-01	LEVER (FL)	
* 14	3-010-096-01	COVER (UPPER)	
* 15	A-3317-606-A	MAIN BOARD, COMPLETE	
* 16	3-022-694-01	HOLDER (TR3)	
17	3-935-636-11	SCREW (FP)	
18	X-3373-215-1	ARM (FL) ASSY (US, Canadian)	
18	X-3375-357-1	ARM (FLT) ASSY (E)	
* 19	3-013-658-01	SHEET (FJ), PROTECTION	
20	X-3373-986-1	ARM (FR) ASSY (US, Canadian)	
20	X-3375-360-1	ARM (FRT) ASSY (E)	
21	3-350-124-01	CUSHION (EJECT) (US, Canadian)	
21	3-024-065-01	CUSHION (EJECT) (E)	
22	3-911-215-02	SHEET (LEAD RETAINER) (US, Canadian)	
22	3-024-067-01	CUSHION (T), BATTERY (E)	
23	3-028-802-01	SPACER (MOUNT 30)	
IC201	8-759-054-12	IC PQ09RA1	
IC203	8-759-324-40	IC KIA7805PI	

(2) MECHANISM DECK SECTION-1 (MG-250C-137)



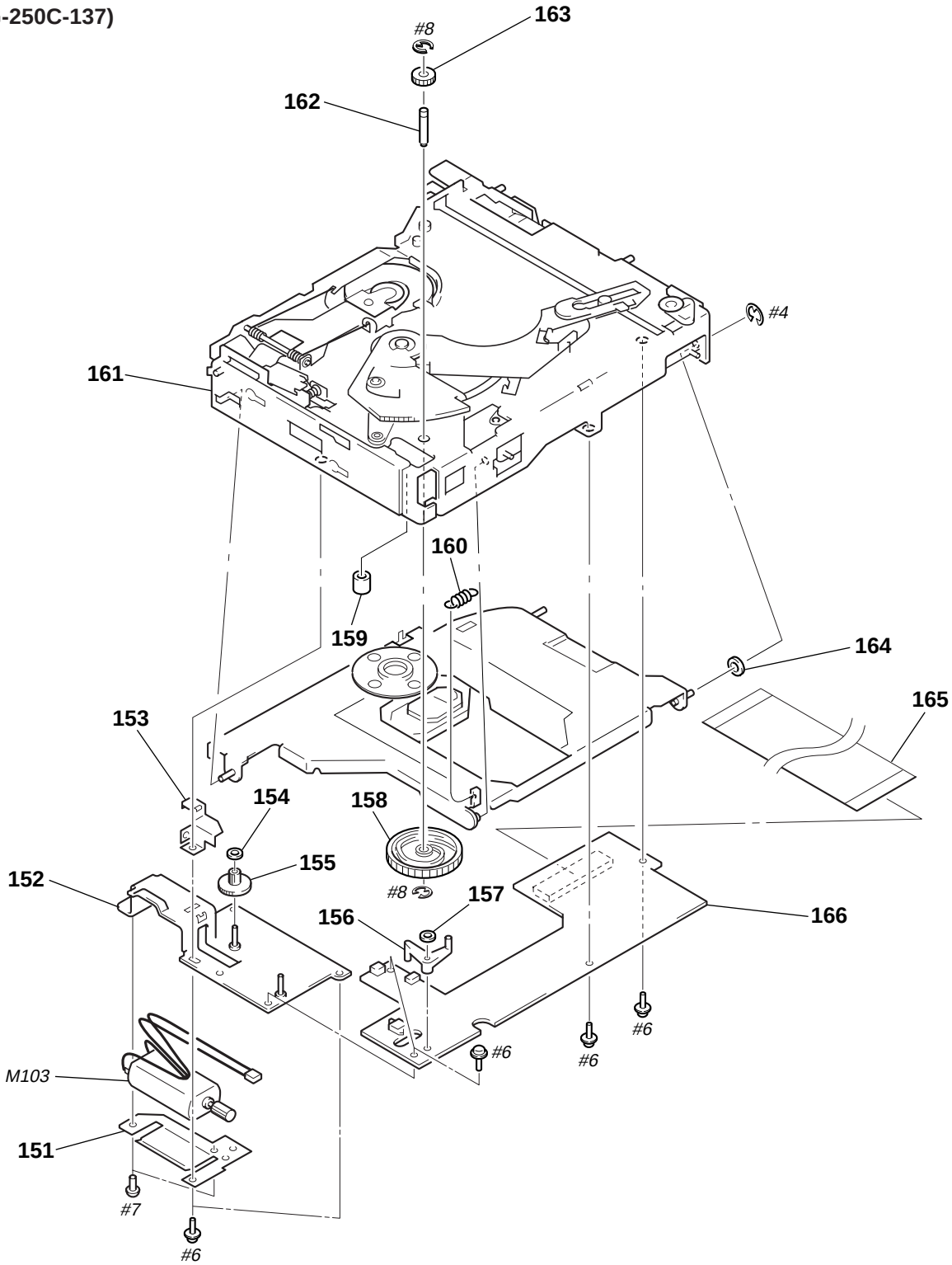
Ref. No.	Part No.	Description	Remark
51	X-3375-497-1	CHASSIS (U) SUB ASSY	
52	3-024-161-01	SPRING (SUT)	
53	4-965-759-01	WASHER, POLYETHYLENE	
54	3-011-997-01	SPRING (STOPPER. LOWER)	

(3) MECHANISM DECK SECTION-2 (MG-250C-137)



Ref. No.	Part No.	Description	Remark
101	3-024-170-01	SPRING (SB), TENSION	
* 102	3-024-172-01	BRACKET (EVM)	
103	X-3375-498-4	CHASSIS (D) SUB ASSY	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	

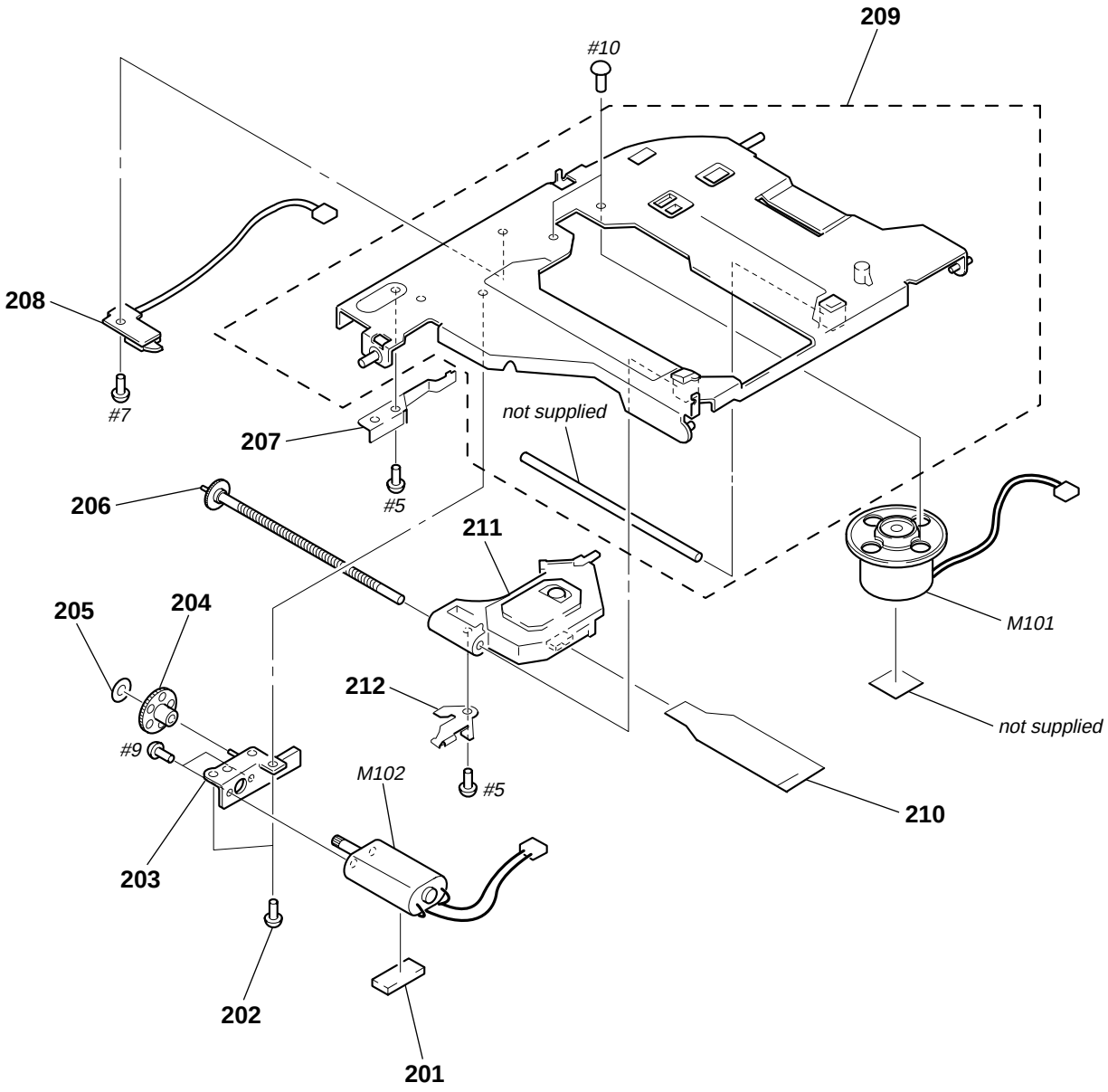
(4) MECHANISM DECK SECTION-3 (MG-250C-137)



Ref. No.	Part No.	Description	Remark
* 151	3-024-150-01	RETAINER (CHM)	
* 152	X-3375-445-1	BRACKET (CHM) ASSY	
153	3-010-270-01	COVER (CHM)	
154	3-321-813-01	WASHER, COTTER POLYETHYLENE	
155	3-017-139-01	GEAR (WORM LOAD A)	
156	3-010-255-01	ARM (LSW)	
157	3-573-936-00	STOPPER, REEL	
158	X-3373-552-1	GEAR (LOAD 1) ASSY	
159	3-010-252-01	ROLLER (CRE)	

Ref. No.	Part No.	Description	Remark
160	3-010-268-01	SPRING (DH), TENSION	
* 161	A-3290-194-F	CHASSIS (EVY) (MAIN) ASSY	
162	3-010-254-01	SHAFT (ROTARY PREVENTION C)	
163	3-010-253-01	GEAR (LOMINI)	
164	3-701-438-11	WASHER, 2.5	
165	1-664-627-11	MAIN FLEXIBLE BOARD	
* 166	A-3313-586-A	RF BOARD, COMPLETE	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	

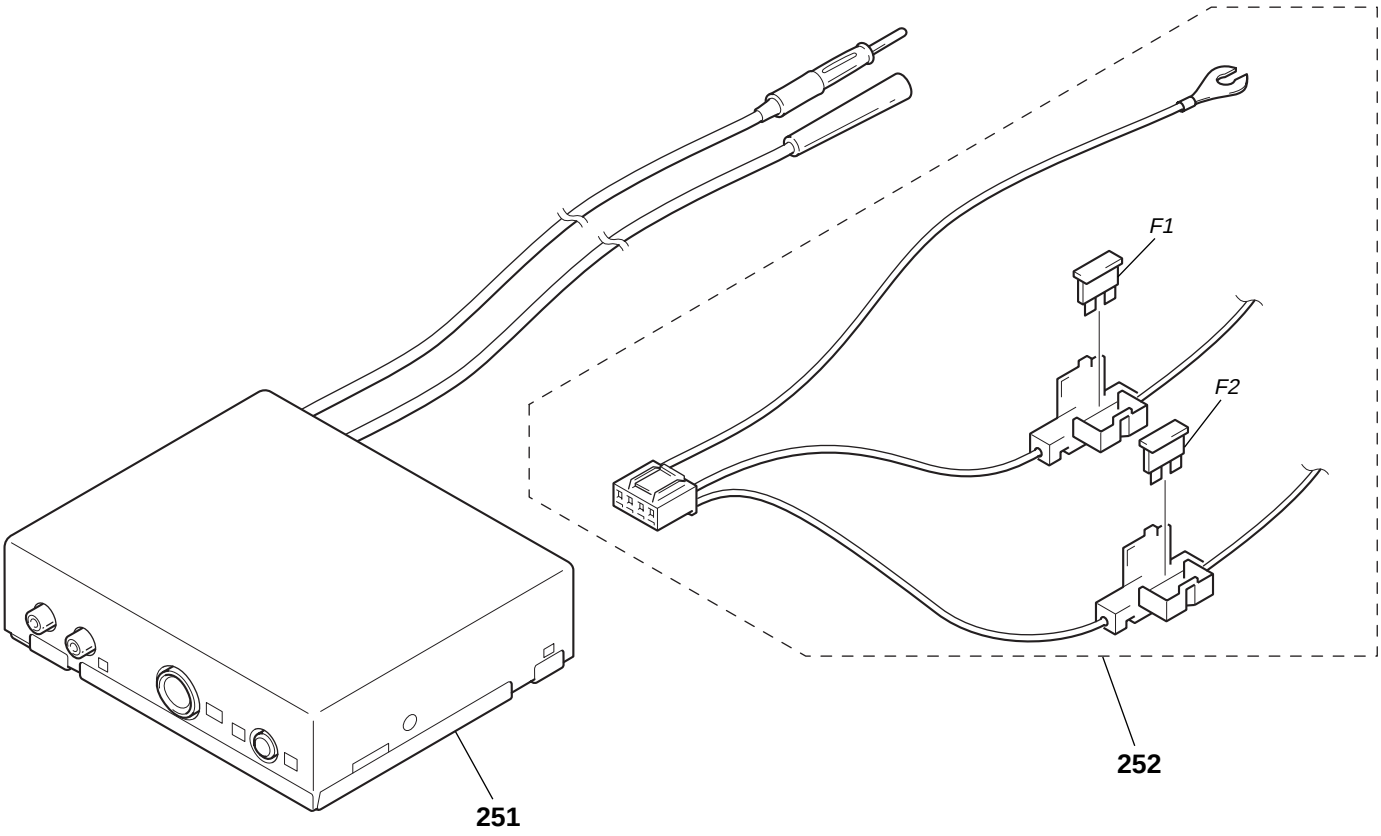
(5) MECHANISM DECK SECTION-4 (MG-250C-137)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	3-911-215-02	SHEET (LEAD RETAINER)	
202	3-920-362-01	SCREW (ESCUTCHEON)	
203	X-3373-229-1	BASE (SLED) ASSY	
204	3-010-258-01	GEAR (SLED MID)	
205	3-573-936-00	STOPPER, REEL	
206	A-3291-958-A	SHAFT (SLED) ASSY	
207	3-010-263-01	DETENT (SHAFT THRUST)	
* 208	1-664-104-11	SW BOARD	
* 209	A-3301-077-A	BASE (OPT) (J) ASSY	
210	1-664-626-11	OP FLEXIBLE BOARD	
⚠211	8-820-010-05	OPTICAL PICK-UP KSS-521A/J2RP	
212	3-010-262-01	DETENT (SLED)	
M101	A-3291-956-A	MOTOR SUB ASSY, SPINDLE	
M102	A-3291-955-A	MOTOR SUB ASSY, SLED	

(6) HIDEAWAY UNIT SECTION



Ref. No.	Part No.	Description	Remark
251	1-473-881-21	RF UNIT (HIDEAWAY)	
252	1-777-519-12	CORD (WITH CONNECTOR) (POWER) (US, Canadian)	
252	1-777-519-31	CORD (WITH CONNECTOR) (POWER) (E)	

Ref. No.	Part No.	Description	Remark
F1	1-532-731-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A/32V)	
F2	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) (1A/32V)	

SECTION 9
ELECTRICAL PARTS LIST

JACK **MAIN**

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiquens pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	1-672-620-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C901	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C903	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN901	1-779-077-11	PLUG, CONNECTOR (CONTROL, AUDIO OUT)			
CNJ901	1-778-775-21	CONNECTOR, FPC 13P			
		< FERRITE BEAD >			
FB901	1-500-445-21	FERRITE	0uH		
FB902	1-500-445-21	FERRITE	0uH		
FB903	1-500-445-21	FERRITE	0uH		
		< IC LINK >			
IC901	1-532-686-21	LINK, IC			
**********					
*	A-3317-606-A	MAIN BOARD, COMPLETE			
		**********			
*	3-022-694-01	HOLDER (TR3)			
	3-028-802-01	SPACER (MOUNT 30)			
		< CAPACITOR >			
C101	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C103	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C104	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C105	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C106	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C107	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-110-569-11	TANTAL. CHIP	47uF	20%	6.3V
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C122	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-124-589-11	ELECT	47uF	20%	16V
C202	1-126-513-11	ELECT	47uF	20%	6.3V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C204	1-115-466-00	ELECT	1000uF	20%	16V
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C206	1-124-589-11	ELECT	47uF	20%	16V
C207	1-124-589-11	ELECT	47uF	20%	16V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-124-589-11	ELECT	47uF	20%	16V
C210	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C211	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C212	1-164-346-11	CERAMIC CHIP	1uF		16V
C213	1-164-346-11	CERAMIC CHIP	1uF		16V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C306	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C310	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C401	1-124-589-11	ELECT	47uF	20%	16V
C402	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C403	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C404	1-126-513-11	ELECT	47uF	20%	6.3V
C405	1-126-513-11	ELECT	47uF	20%	6.3V
C406	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C407	1-126-157-11	ELECT	10uF	20%	16V
C408	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C409	1-126-513-11	ELECT	47uF	20%	6.3V
C410	1-126-157-11	ELECT	10uF	20%	16V
C411	1-126-157-11	ELECT	10uF	20%	16V
C412	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C413	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C414	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C501	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C502	1-163-029-11	CERAMIC CHIP	0.0047uF		50V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C806	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C807	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CNJ101	1-770-351-11	CONNECTOR, FPC 26P			
CNJ201	1-770-350-21	CONNECTOR, FPC 13P			
* CNP301	1-580-055-21	PIN, CONNECTOR (SMD) 2P			

MAIN

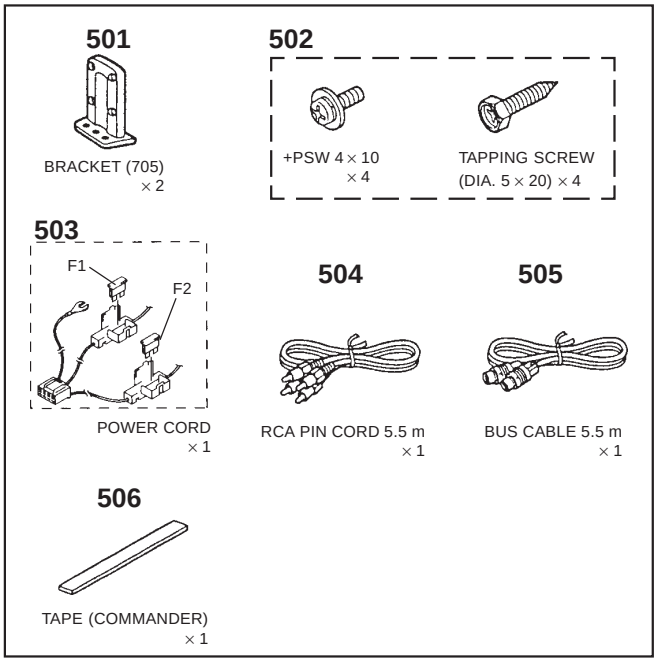
Ref. No.	Part No.	Description	Remark
		< DIODE >	
D201	8-719-210-33	DIODE EC10DS2	
D202	8-719-210-33	DIODE EC10DS2	
D203	8-719-988-61	DIODE 1SS355TE-17	
D204	8-719-422-64	DIODE MA8062-M	
D205	8-719-038-48	DIODE 1SS319 (TE85R)	
D206	8-719-988-61	DIODE 1SS355TE-17	
D207	8-719-422-62	DIODE MA8062-L-TX	
D301	8-719-801-78	DIODE 1SS184	
D311	8-719-975-40	DIODE RB411D	
D416	8-719-422-62	DIODE MA8062-L-TX	
D417	8-719-422-62	DIODE MA8062-L-TX	
D501	8-719-017-94	DIODE MA8180	
D502	8-719-975-40	DIODE RB411D	
D503	8-719-975-40	DIODE RB411D	
D504	8-719-017-94	DIODE MA8180	
D505	8-719-975-40	DIODE RB411D	
		< FERRITE BEAD/SHORT >	
FB101	1-500-445-21	FERRITE 0uH	
FB102	1-500-445-21	FERRITE 0uH	
FB103	1-500-445-21	FERRITE 0uH	
FB401	1-500-445-21	FERRITE 0uH	
FB411	1-216-295-00	SHORT 0	
FB412	1-216-295-00	SHORT 0	
FB413	1-216-295-00	SHORT 0	
FB414	1-216-295-00	SHORT 0	
FB421	1-500-445-21	FERRITE 0uH	
FB422	1-500-445-21	FERRITE 0uH	
FB423	1-500-445-21	FERRITE 0uH	
		< IC >	
IC101	8-752-384-15	IC CXD2530Q	
IC201	8-759-054-12	IC PQ09RA1	
IC202	8-759-443-41	IC RH5VL40AA-T1C	
IC203	8-759-324-40	IC KIA7805PI	
IC204	8-759-444-86	IC BA8272F-E2	
IC301	8-759-040-83	IC BA6287F	
IC302	8-752-902-61	IC CXP84124-080Q	
IC401	8-759-494-78	IC TC9464FN-EL	
		< TRANSISTOR >	
Q201	8-729-016-83	TRANSISTOR 2SB1446	
Q202	8-729-901-00	TRANSISTOR DTC124EK	
Q203	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q204	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q205	8-729-822-05	TRANSISTOR 2SD1622-ST-TD	
Q301	8-729-020-67	TRANSISTOR XN1A312-TX	
Q401	8-729-901-00	TRANSISTOR DTC124EK	
Q402	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q403	8-729-015-39	TRANSISTOR DTC323TK	
Q404	8-729-015-39	TRANSISTOR DTC323TK	
		< RESISTOR >	
R101	1-216-119-00	METAL CHIP 820K 5% 1/10W	
R102	1-216-105-00	RES, CHIP 220K 5% 1/10W	
R103	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R104	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R105	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R106	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R203	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R204	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R205	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R206	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R207	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R208	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R212	1-216-295-00	SHORT 0	
R213	1-216-295-00	SHORT 0	
R301	1-216-065-00	RES, CHIP 4.7K 5% 1/10W	
R302	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R303	1-216-065-00	RES, CHIP 4.7K 5% 1/10W	
R304	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R305	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R306	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R307	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R308	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R310	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R311	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R312	1-216-065-00	RES, CHIP 4.7K 5% 1/10W	
R313	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R318	1-216-033-00	METAL CHIP 220 5% 1/10W	
R319	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R321	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R331	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R343	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R401	1-216-035-00	METAL CHIP 270 5% 1/10W	
R405	1-216-033-00	METAL CHIP 220 5% 1/10W	
R406	1-216-033-00	METAL CHIP 220 5% 1/10W	
R407	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R408	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R411	1-216-029-00	METAL CHIP 150 5% 1/10W	
R501	1-216-089-00	RES, CHIP 47K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV301	1-223-834-11	RES, ADJ, CARBON 47.0K	
RV302	1-225-412-11	RES, VAR, SLIDE 10K (ELEVATOR HEIGHT SENSOR)	
		< SWITCH >	
SW301	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE EJECT END DETECT)	
SW302	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE IN/OUT DETECT)	
SW303	1-571-532-21	SWITCH, TACTIL (⏏)	
		< VIBRATOR >	
X301	1-767-261-21	VIBRATOR, CERAMIC (8MHz)	
X401	1-767-511-11	VIBRATOR, CERAMIC (16.93MHz)	

****

Ref. No.	Part No.	Description			Remark
*	A-3313-586-A	RF BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C12	1-113-500-11	TANTAL. CHIP	100uF	20%	10V
C13	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C14	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C15	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C16	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C17	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C18	1-111-253-11	TANTAL. CHIP	100uF	20%	6.3V
C19	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C21	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C22	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C23	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C24	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C25	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C26	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C27	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C28	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C29	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C31	1-113-987-11	TANTAL. CHIP	4.7uF	20%	25V
C32	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C33	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C35	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C36	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C38	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C39	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C40	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C41	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C42	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C53	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C54	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C55	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C56	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C57	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C58	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C59	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C60	1-104-914-11	TANTAL. CHIP	22uF	20%	16V
		< CONNECTOR >			
CNJ11	1-778-776-21	CONNECTOR, FPC 17P			
CNJ12	1-778-777-21	CONNECTOR, FPC 26P			
* CNP11	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP51	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP52	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP53	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
		< IC >			
IC11	8-752-082-14	IC CXA1992BR			
IC51	8-759-071-79	IC BA6297AFP			
IC52	8-759-040-83	IC BA6287F			
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR 2SB624-BV345			
		< RESISTOR >			
R11	1-218-348-11	RES, CHIP	110K	5%	1/16W
R12	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-839-11	METAL CHIP	33K	5%	1/16W
R14	1-218-348-11	RES, CHIP	110K	5%	1/16W
R16	1-216-857-11	METAL CHIP	1M	5%	1/16W
R17	1-216-837-11	METAL CHIP	22K	5%	1/16W
R18	1-216-841-11	METAL CHIP	47K	5%	1/16W
R22	1-216-857-11	METAL CHIP	1M	5%	1/16W
R25	1-216-851-11	METAL CHIP	330K	5%	1/16W
R26	1-216-845-11	METAL CHIP	100K	5%	1/16W
R27	1-216-295-00	SHORT	0		
R28	1-216-295-00	SHORT	0		
R30	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R31	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R32	1-216-837-11	METAL CHIP	22K	5%	1/16W
R33	1-216-158-00	RES, CHIP	22	5%	1/8W
R34	1-216-855-11	METAL CHIP	680K	5%	1/16W
R35	1-216-835-11	METAL CHIP	15K	5%	1/16W
R36	1-216-836-11	METAL CHIP	18K	5%	1/16W
R37	1-216-851-11	METAL CHIP	330K	5%	1/16W
R38	1-216-837-11	METAL CHIP	22K	5%	1/16W
R39	1-216-847-11	METAL CHIP	150K	5%	1/16W
R40	1-218-273-11	RES, CHIP	510K	5%	1/16W
R41	1-218-296-11	RES, CHIP	75K	5%	1/16W
R42	1-202-930-11	RES, CHIP	750K	5%	1/16W
R43	1-216-849-11	METAL CHIP	220K	5%	1/16W
R44	1-216-846-11	METAL CHIP	120K	5%	1/16W
R45	1-216-837-11	METAL CHIP	22K	5%	1/16W
R46	1-216-847-11	METAL CHIP	150K	5%	1/16W
R47	1-216-834-11	METAL CHIP	12K	5%	1/16W
R48	1-216-845-11	METAL CHIP	100K	5%	1/16W
R49	1-216-093-00	RES, CHIP	68K	5%	1/10W
R50	1-216-841-11	METAL CHIP	47K	5%	1/16W
R51	1-216-073-00	METAL CHIP	10K	5%	1/10W
R52	1-216-093-00	RES, CHIP	68K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-073-00	METAL CHIP	10K	5%	1/10W
R55	1-216-073-00	METAL CHIP	10K	5%	1/10W
R56	1-216-093-00	RES, CHIP	68K	5%	1/10W
R57	1-216-081-00	METAL CHIP	22K	5%	1/10W
R58	1-216-093-00	RES, CHIP	68K	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-073-00	METAL CHIP	10K	5%	1/10W
R61	1-216-073-00	METAL CHIP	10K	5%	1/10W
R62	1-216-085-00	METAL CHIP	33K	5%	1/10W
R63	1-216-073-00	METAL CHIP	10K	5%	1/10W
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W
R65	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV14	1-238-091-11	RES, ADJ, CERMET 22K	
		< SWITCH >	
SW11	1-762-946-12	SWITCH, PUSH (1 KEY) (CHUCKING END DETECT)	
SW12	1-762-946-12	SWITCH, PUSH (1 KEY) (SAVE END DETECT)	
**********			
*	1-664-104-11	SW BOARD	
		*********	
		< SWITCH >	
SW1	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)	
**********			
		MISCELLANEOUS	
		**********	
3	1-664-628-11	JACK FLEXIBLE BOARD	
165	1-664-627-11	MAIN FLEXIBLE BOARD	
210	1-664-626-11	OP FLEXIBLE BOARD	
⚠211	8-820-010-05	OPTICAL PICK-UP KSS-521A/J2RP	
F1	1-532-731-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A/32V)	
F2	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) (1A/32V)	
M101	A-3291-956-A	MOTOR SUB ASSY, SPINDLE	
M102	A-3291-955-A	MOTOR SUB ASSY, SLED	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-627-852-07	SCREW, PRECISION +P 1.7X2.5	
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#3	7-685-781-09	SCREW +PTT 2X4 (S)	
#4	7-624-104-04	STOP RING 2.0, TYPE-E	
#5	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#6	7-628-253-00	SCREW +PS 2X4	
#7	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#8	7-624-102-04	STOP RING 1.5, TYPE-E	
#9	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#10	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE3	
#11	7-685-851-04	SCREW +BVTT 2X4 (S)	
#12	7-685-780-09	SCREW +PTT 2X3 (S)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-473-112-72	WIRED REMOTE COMMANDER (RF) (RM-X64)	
	3-865-017-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH) (US, Canadian)	
	3-865-018-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (US, Canadian)	
	3-866-343-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH, CHINESE) (E)	
	3-866-344-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH, CHINESE) (E)	

Ref. No.	Part No.	Description	Remark
	A-3291-950-C	MAGAZINE (250) ASSY	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
501	3-011-778-01	BRACKET (705)	
* 502	X-3369-824-1	SCREW ASSY	
503	1-777-519-12	CORD (WITH CONNECTOR) (POWER)	
504	1-590-874-11	CORD, CONNECTION (RCA PIN CORD 5.5m)	
505	1-590-519-21	CORD (WITH CONNECTOR) (BUS CABLE 5.5m)	
506	not supplied		
F1	1-532-731-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A/32V)	
F2	1-532-798-11	FUSE (BLADE TYPE) (AUTO FUSE) (1A/32V)	



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

99B0525-1
Printed in Japan © 1999. 2
Published by Quality Assurance Dept.